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DEPARTMENT OF THE INTERIOR

UNITED STATES BUREAU OF MINES
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COMPETITIVE CONDITIONS IN THE INTERNATIONAL COAL TRADE

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DEPARTMENT OF THE INTERIOR - BUREAU OF MINES

COMPETITIVE CONDITIONS IN THE INTERNATIONAL COAL TRADE[1]

By John R. Bradley[2]

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[2] Coal Economics Division, U. S. Bureau of Mines.

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INTRODUCTION

The object of this paper is to survey and analyze the bearing of economic nationalism, competitive sources of energy, and technologic developments on international trade in coal with especial reference to the competitive position of the leading coal-exporting countries in the Italian market, the largest in the Mediterranean region, and the Brazilian market, the second largest in Latin America.

The political, economic, and financial disturbances caused mainly by the World War have resulted in an amazing situation. Especially since 1930 have conditions been complicated.

Under modern conditions, coal is a necessity of life in most countries. This fact has prompted the leading coal-exporting countries to promote their export coal trade by unusual measures, which have soon been offset by similar action on the part of competing countries or by regulations in importing countries to protect their own coal-mining industry. It is probable that the measures frequently were initiated in an endeavor to relieve or prevent the unemployment situation in these countries or to obtain foreign exchange, or both.

The result of the action taken has not always been measurable, and data have not always been available. Therefore the use of estimates has been necessary.

Formerly the trade was governed primarily by geographic and geologic conditions; the location and character of the coal measures, which,largely regulate production costs; the inland transportation costs; and the movement in international trade of bulk commodities, especially cereals and ores, which affect the ocean freight rate; in other words, the mine price, rail freight, and ocean freight to the foreign port. Marine insurance, which probably amounts to $0.03 a long ton, has not been considered an important factor.

In post-war years economic laws relating to the world coal industry and trade have not been fully effective because of international and domestic political factors such as the following:

Changed national frontiers.
Coal deliveries as war reparations.
Subsidies and bounties, preferential rail rates on export coal, aid by the coal industry, and high domestic and low export prices.
Mine labor strikes.
Barter of coal for other commodities.
Government control of the coal industry.
Devaluation of currencies and control of foreign exchange.
Reciprocal trade agreements and international agreements.
Import license, quota systems, and high custom duties.
Sanctions.

These factors have altered the channels of international coal trade. Other factors arising from more economic causes, that have tended to lessen the flow of coal are:

New centers of coal production.
Increased use of fuel oils.
Greater development of water power.
More efficient use of coal.

Many of these developments were the result of the World War, and the remainder probably were the result of the world-wide economic depression which, to some extent at least, was an outgrowth of the war.

Surplus capacity has also furthered keen competition in international markets, as the production of coal cannot be controlled as easily as can the production of manufactured goods.

Few, if any, trades have experienced such "ups" and "downs" as has the export coal trade in post-war years.

During the war, and for some years after, there was a shortage of coal in many countries due to the ravages of war and the price of imported coal was high. Strikes occurred in Great Britain in 1920 and 1921, and following this a period of deflation began. Export prices fell about 65 percent.

In 1920 United States exports of bituminous coal set an all-time high record, as British prices were high and there was a strike of some importance; German production remained low and the devastated French mines had not been reconditioned;

In 1922 conditions in the export coal trade as a whole improved, partly owing to a serious strike in the coal fields of the United States. The occupation of the Ruhr by the Allies in 1923 gave a fillip to the export trade which carried over to 1924. The year 1925 was also eventful, as Allied troops evacuated the Ruhr and Great Britain returned to the gold standard which it had abandoned in 1919; the devastated French mines were rehabilitated; and Polish coal deliveries to Germany, about 6,000,000 metric tons a year, ceased. The critical strike year for the British coal industry, 1926, followed, with the loss, principally to Poland, of millions of tons of business, mainly in sales to the Scandinavian countries.

After 1926 conditions remained fairly stable until the depression of 1929-30. In 1931 Great Britain again abandoned the gold standard. This and the depression complicated matters and resulted in the adoption of many measures that will be discussed later in this study.

In 1932 the Ottawa, Canada, Conference of the British Empire was held to increase inter-Empire trade. In this year, reparation coal deliveries by Germany, which began in 1919, were discontinued.

In 1933 reciprocal trade agreements became effective between the Scandinavian countries and Great Britain, thus increasing Polish competition in other markets; the most rigid government control of the coal industries of Germany and Poland; and the abandonment of the gold standard and the formation of the National Recovery Administration by the United States

Foreign-exchange restrictions in most countries were tightened in 1934 and again in 1935 when an Anglo-Polish agreement regulating exports to and prices in certain markets was concluded; sanctions were applied against Italy, and the Guffey Bill, later declared to generally unconstitutional, passed the American Congress.

The tonnage of coal entering into international trade has greatly declined since 1913, and the relative position of the leading exporting countries has changed.

In 1913 Great Britain, Germany, and the United States exported a total of 132,476,000 metric tons of coal, of which Great Britain shipped 56.3 percent, Germany 26.1 percent, and the United States 17.6 percent.

Exports in 1935, essentially from the same territory (as in 1913 Polish coal fields were then practically all a part of Germany) totaled 85,335,000 metric tons, a decrease of 35.6 percent compared with 1913. In this year Britain shipped 45.9 percent of the total, the United States 12 percent and Germany and Poland combined 42.1 percent. Poland's proportion of the total exports was 10.7 percent. Thus the proportion exported by Germany and Poland has increased while that of Great Britain and the United States has declined.

ECONOMIC AND SOCIAL IMPORTANCE OF THE COAL INDUSTRY

While the "trunk" of the coal industry is affected by domestic and international politics, its "roots" are sunk deep in economic and social problems. It is pertinent therefore to point out the importance of the export coal trade in the economic and social structure of the exporting State.

Proportion of Coal Exports to All Exports

The proportionate value of coal exports to all exports from Great Britain in 1913, 1925, 1929, and 1934 was 9.7, 6.5, 6.6, and 6.9 percent, respectively; from Germany 4.8, 3.1, 3.9, and 3.1 percent, respectively; from the United States (bituminous coal only) 1.7, 1.4, 1.3, and 1.9 percent, respectively; and from Poland 11.2 percent in 1925, 13.9 percent in 1929 and about 16 percent in 1934. (Based on foreign trade statistics of the respective countries and Report No. 66 from Commercial Attaché Clayton Lane, Warsaw, Apr. 3, 1935.)

The data for the United States cover bituminous coal only, and for 1913 the fiscal year 1913-14 was used. It is noteworthy that in 1934 the proportionate value in the United States was higher (although the volume was considerably less) than in 1913.

Poland was the only country which continued to increase the proportionate value of coal exports to all exports.

Coal Exports as a Percentage of Production

Exports and bunker coal accounted for 33 percent of the total coal production of Great Britain in 1913, 25.5 percent in 1928, and 24.0 percent in 1934. Corresponding figures for Germany were 24.5, 22.5 (including reparation deliveries), and 17.5 percent; and for the United States 5.5, 4.0, and 3.4 percent, respectively. In 1925 Poland exported 28 percent of its production, in 1928, 31 percent, and in 1934, 34.0 percent.

Unemployment as a Factor in Aiding Coal Exports

Unemployment of coal miners in recent years has doubtless prompted certain governments to aid their export coal trade, and this must have been particularly true in Germany and Poland.

In 1913 and in 1925 there was comparatively little change in the number of employees in United States bituminous coal mines and in coal mines in Great Britain. The number employed in the United States increased about 3 percent over 1913; in Great Britain the number was about the same in each year; but in Germany, in the present area, the number employed in 1925 increased about 11 percent over 1913.

A large decrease in number of employees took place between 1925 and 1934. The decrease in the United States was 22 percent, Great Britain 28 percent, Germany 42 percent, and Poland 41 percent. (Based on Coal in 1925, p. 522, and Bituminous Coal Tables, 1934, p. 2, U. S. Bureau of Mines; Coll. Year Book and Coal Trades Directory, London, 1935, p. 528; and Statistics of the Reichskolenrat, 1934, p. 40 and 80.)

Percentage of Total Population Engaged in Coal Mining

It was estimated some time ago that persons engaged in coal mining constitute about 2 percent of the total population in Great Britain, 0.8 percent in Germany, 0.4 percent in Poland, and 0.4 percent in the United States (bituminous mines).

CHANGED FRONTIERS

Poland and the Saar are the two outstanding examples of the effect of changed frontiers on international trade in coal. Poland is now the world's fourth largest exporter of coal. Exports originate mainly in territory formerly German, and Germans have large investments in Polish mining and exporting companies. Between January 1920 and February 1935 the Saar, which normally produces about 13,000,000 metric tons of coal annually, was included in French coal statistics, and since February 1935 the Saar has again become a part of Germany and is included in German statistics as it was prior to 1920.

REPARATION COAL

As a result of the World War, Germany, between 1919 and 1932 inclusive, delivered more than 150,000,000 metric tons of coal, coke, and briquets to France, Italy, and Belgium. The American consul at Cardiff has reported that Welsh coal exporters believed they had lost between 6,000,000 and 7,000,000 metric tons of business a year as a result of war reparation deliveries.

OTHER FACTORS

The foregoing are the principal factors that have influenced international trade in coal in post-war years. Other factors that resulted from more economic causes were changed centers of coal production, the vast increase in world petroleum production, the doubling of world water-power production, and, last but not least, the more efficient use of coal.

Changing Centers of Coal Production

There must be various reasons why new centers of coal production should increase in importance while at the same time older producing regions are suffering a decline. The scarcity of coal and resulting high prices during and after the war no doubt were the chief reasons, but others must have been the development of national reserves of coal as a means of national self defense, for, in the processing of most ores required in the manufacture of metals, coke is necessary, and from the byproducts of coke production many chemicals useful in war may be produced. Again, for those countries that have a deficient petroleum reserve, gasoline can be obtained by the hydrogenation of coal and coal tar. Finally, the depression, with its resulting unemployment and scarcity of foreign exchange, gave impetus to the development of local coal supplies.

Wörld Coal Production

World production of coal not including lignite, was 1,216,300,000 metric tons in 1913 and 1,087,700,000 in 1934, a decrease of about 10.6 percent. Vital changes have taken place, however, in producing centers. Production in the Americas in 1934 was 143,500,000 and in Europe 42,900.000 metric tons less than in 1913. Increases took place in most of the other grand geographic divisions. Asia increased its production by about 56,500,000 metric tons and Africa by about 4,800,000. Production in Oceania was 3,500,000 metric tons less than in 1913.

Approaching the subject more closely it is found that Canadian production in 1934 was about 3,800,000 metric tons less than in 1913 while the United States was short 141,400,000 metric tons. European production in 1934 was 42,900,000 metric tons less than in 1913, but important changes took place in producing centers and, as in the United States, much energy was derived from sources other than coal. Production in Great Britain declined from 292,000,000 metric tons in 1913 to 224,300,000 in 1934; in Germany from 140,800,000 to 124,900,000; and in Poland from 41,200,000 to 29,300,000. On the other hand, European Russia increased its production from 27,300,000 metric tons in 1913 to 66,400,000 in 1934; Belgium from 22,800,000 to 26,400,000; and the Netherlands from 1,900,000 to 12,300,000.

Large increases took place in Asia and Africa, particularly in the former. Production in Asia in 1913 was 58,500,000 metric tons and in 1934 about 115,000,000. The greatest gains were made by China, where production of 21,000,000 metric tons in 1934 was about 8,000,000 more than in 1913. Japan, with 47,000,000 metric tons in 1934, showed an increase of 23,000,000 over 1913; and India, with 22,400,000 in 1934, showed an increase of 5,900,000 metric tons.

Africa, mainly the Union of South Africa, shows an increase in coal production of 4,300,000 metric tons as compared with 1913, but Oceania produced

3,500,000 metric tons less. (The German Reichskohlenrat, as quoted in the Iron and Coal Trades Review, London, July 17, 1936, p. 95.)

Great Increase in World Petroleum Production

While world coal production was some 10.6 percent less in 1934 than it was in 1913, world petroleum production increased about fourfold, or from 381,508,916 to 1,522,243,000 barrels. (Mineral Resources, 1913, Part II, p. 943, and International Petroleum Trade, Bureau of Mines, vol. 5, no. 4, p. 82.

World Water-Power Increases

Data on the installed horsepower in water-power plants have been estimated for 1913, and those for 1934 have been taken from a release of the United States Geological Survey dated April 22, 1935. Comparable figures for the world for 1913 and 1934 were 13,000,000 and 55,265,000 horsepower, respectively.

Competition from Petroleum and Water Power

Energy available from world supplies of coal, petroleum, and water power in 1934 was approximately 21 percent more than was available in 1913 although world coal production was 10.6 percent less than in 1913. Exact data are not available, but assuming that the total world supply of oils available in 1913 was 100,000,000 barrels and that 13,000,000 hydraulic horsepower had been developed, one arrives at the following conclusion:

In 1913 world coal, petroleum, and water power apparently available, in terms of coal, were approximately 1,350,677,229 metric tons, of which coal accounted for 90 percent, petroleum 7 percent, and water power 3 percent. In 1934 a grand total of 1,634,055,750 metric tons was available, of which coal accounted for 66.6 percent, petroleum 23.3 percent, and water power 10.1 percent.

In arriving at the total amount of coal, petroleum, and water power available, in terms of coal, 4 barrels of petroleum have been considered the equivalent of 1 metric ton of coal and 1 hydraulic horsepower for one year as equivalent to 3 metric tons of coal.

Coal- and Oil-Burning Vessels

The development, nearly altogether in post-war years, of the use of fuel oil under steamship boilers has measurably affected the export and bunker coal trades An important part of the tonnage of coal exported is consigned to bunker stations throughout the world. In addition to export tonnage, coal is required as fuel by the transporting vessel.

According to Lloyd's Register, one hundred and first annual issue, the percentages of total gross tonnages using the various fuels in 1914 and 1934, respectively, were as follows: Coal, 88.84 and 51.69; oil fuel for boilers, 2.65 and 30.28; oil in internal-combustion engines, 0.45 and 16.17; and sailing vessels, nonpropelled barges, etc., 8.06 and 1.86 percent.

Increased Efficiency in Use of Coal

World-wide data on increased efficiency in the use of coal are not available. Excluding coal used for domestic purposes and that used for ships bunkers, which account for about 20 percent of world consumption, great economy has taken place in the use of coal for railway fuel and for the production of electricity, coal gas, and iron and steel, which account for the remaining 80 percent.

According to the chapter on Coal in Minerals Yearbook 1935, page 277, fuel economy has made great strides in the United States, as indicated in the following table:

Indicators of the effect of fuel economy on consumption of coal per unit of performance since the World War in the United States[1]

	Pounds	Reduction (percent)
Steam railroads:		
Pounds per 1,000 gross ton-miles freight service:		
Average, 1919-20	170	....
Average, 1934	122	28.2
Pounds per passenger-train car mile:		
Average, 1919-20	18.5	....
Average, 1934	15.2	17.8
Electric public-utility power plants:		
Pounds per kw.-hr., 1919	3.2	....
Pounds per kw.-hr., 1934	1.5	53.1
Iron and steel - pounds coking coal per ton of pig:[2]		
1918	3.577	....
1934	2.927	18.2
Coke manufacture: Saving of heat values through recovery of gas, tar, light oils, and breeze by extension of by-product in place of beehive coking, 1913-34, expressed as percent of coal used for all coke in 1934[3]	......	19.4

[1] Coal chapter, Minerals Yearbook, 1935, p. 277.

[2] Includes only savings through higher yields of merchantable coke per ton of coal charged and lower consumption of coke per ton of iron. Excludes economies through recovery of byproducts, which are treated in next item.

[3] These byproducts are used in part for boiler fuel, in part for metallurgical purposes, in part for domestic heating and cooking, and to a small extent as automotive fuel.

The coal saved throughout the world by the present more efficient use since 1913 amounted to about 200,000,000 long tons in 1934.

The foregoing describes briefly what are believed to be the main causes for the measures taken by the various countries, which will now be discussed.

The word "subsidy" can hardly be applied to many forms of government aid granted in post-war years. Poland claims that its low export rate on coal moved by State-owned railways is not a subsidy as the increased traffic brought about thereby would be lost if the low rates were rescinded. Germany is probably of the same opinion. In Great Britain, except in 1925-26 when action described as a subsidy was taken and excluding the approximate $10,000,000 subsidy to the tramp shipping trade, no funds have been specifically appropriated in aid of the export trade. What happened under the Derating Act of 1929, which has continued to date, was a reduction in taxation with a proviso that the railways share part of the reduction in taxation with the export coal trade. Therefore, the word "subsidy" will be used sparingly in this paper, and an effort will be made to explain in detail the peculiar kinds of government assistance rendered the coal industry.

It seems that little, if any, government aid was granted the coal industrie of the various countries in pre-war years, but government aid and aid by the industry and trade have since become the order of the day. Large sums have been specifically appropriated or allowed by the following governments: Spain, shortly after the war; Great Britain, in 1925-26 and 1929 to 1935; the United States, in 1929, 1930, and 1931; Canada, on an increasing scale since about 1925; and Poland in 1933 and prior and subsequent thereto if the reduced rail rates on export coal granted by government-owned railroads is considered. If, as in the case of Poland, the reduced rail rate applies, then Germany also granted government aid during the years under discussion.

Coal Export Subsidies in European Countries

George Hall, M.P., asked the Secretary for Mines, Great Britain, what financial assistance in the form of subsidy or concessions in railway rates or any other assistance was given to coal exports from Germany, Poland, or any other coal-exporting country in Europe.

Captain Crookshank, in reply, issued the following statement:

> Preferential rates for the movement of coal consigned to contested markets are granted by the State railways in Poland, France, Belgium, and Czechoslovakia and by the railway company in Germany. The German coal industry assists the sale of coal in contested markets by drawing on the proceeds of a levy on all coal sold, and German coal exporters are able in a number of markets to secure especially favorable exchange facilities through the operation of the German Government's control of foreign exchange. In Belgium the proceeds of the tax on coal import licenses are allocated to the Belgian coal industry, but it is not known what use is made of this subvention. It is understood that in Czechoslovakia the coal tax is remitted on coal for export. In Poland and Turkey the sale of coal in contested markets is assisted by charging lower prices for coal for export than for coal for inland consumption. (See sections on High Domestic and Low Export Prices and Government Control.)

J. Griffiths asked the Secretary for Mines whether he would secure provision for the assistance of the exporting districts in the proposed central and district selling schemes for the coal-mining industry.

Captain Crookshank replied that the draft orders for the Scotland, South Wales, Northumberland, and Durham districts, which were laid before Parliament a week earlier, included a provision which would enable the executive board for each of those districts, if it so desired, to collect levies for the purpose of facilitating the sale of any class of coal produced in the district. The draft orders for other districts did not contain such a provision, and he understood that the representations to be made to him in regard to the central scheme were unlikely to do so. He had not yet received the formal representations covering amendments of the central scheme. (Coll. Guard., May,29, 1936, p. 1018.)

Great Britain

The following statement was made with reference to preferential taxes accorded to the British coal industry under the Derating Scheme.

> During the year (1929) the second installment of the assistance accorded to the coal mining industry under the Derating Scheme for productive industry, inaugurated under the Local Government Act, 1929, was brought into operation. As from October 1, all collieries, in common with other undertakings engaged in productive industry, became entitled to relief from local rates to the extent of 75 percent of the amount which would be payable but for the provisions of the Scheme. On the basis of estimates presented to Parliament during the debates on the Local Government Bill the relief from this part of the Derating Scheme was calculated to amount to rather more than 3d. per ton on all coal commercially disposable. As the charges to the coal-mining industry in respect of local rates are considerably heavier in some districts than in others the relief will also vary in amount. The district which is likely to secure the greatest relief is South Wales. (British Secretary For Mines, Annual Report 1929, p. 5.)

The Derating Act of 1929 also required the railroads to make a rebate to exporters of coal of part of the savings in taxes that accrued to them under the Derating Act. This rebate has ranged from about $0.16 to $0.20 per long ton. The total allowance on coal, coke, and briquets exported in 1929 was Ł1,802,125; 1930, Ł2,155,048; 1931, Ł1,878,011; 1932, Ł1,933,513; 1933, Ł2,377,998; 1934, Ł2,294,176; and 1935, Ł1,776,562 - a grand total of about $69,097,000. (Coll. Year Book and Coal Trades Directory, London, 1936, p. 611.)

> In addition, a direct cash subvention from the British Treasury of $59,292,272 was granted in 1925 to the industry as a whole. Of this sum, $28,671,098 was allocated to the chief exporting districts of South Wales, Durham, and Northumberland. It is not possible to state to what extent, if any, this sum assisted the export coal trade of the districts. In 1935 a subsidy of Ł2,000,000 (about $10,000,000) was granted the tramp shipping industry, the purpose, in general, to scrap two old tramp steamships and build one new vessel. While this action will very likely assist the export coal trade the extent of the aid is not susceptible of measurement.

British Export Credit Guarantee Scheme

From April 1, 1930, to March 31, 1936, the British Government Export Credit Guarantee Scheme (Overseas Trade Acts, 1920-34) concluded contracts and issued policies under which it assumed liability to guarantee a maximum of about $152,155,000 in credits amounting to about $354,390,000. (Board of Trade Journal, London, Apr. 16, 1936, p. 549.) What part of this amount, if any, applied to export coal is not disclosed.

Canada

Interruptions in supplies of American coal early in the century, during the war, and in 1922, together with the increasing cost of fuel, prompted the Dominion Government to take action which led to the formation of the Dominion Fuel Board in 1923. When this board was appointed the coal question was largely one of supply; nevertheless, a strong national demand had arisen for maximum independence of Canadian fuel from United States supplies. Today the major problem of the board is one of finding markets for native coal. Its efforts to replace Pennsylvania anthracite with Welsh and Scotch anthracite and byproduct coke, domestic and imported, have been largely successful. In an endeavor to substitute low-cost fuels for anthracite, the board invited the attention of domestic consumers to the practicability of using American low-volatile coals for household heating, and today more than 400,000 tons of so-called smokeless coal are used for that purpose in the Central Provinces each year. Much attention has also been given in recent years to the wider utilization of coal from the Maritime Provinces and from Alberta.

In an effort to make greater use of its enormous coal resources (poorly located with respect to consuming centers), Canada has increased its aid to the coal industry from an authorized $200,000 in 1924 to approximately $2,000,000 in a recent year. This sum, however, is only about one-third of the revenue received as duty on coal imported from the United States.

Canadian Order in Council P. C. 869 of April 5, 1935, authorizes:

> With respect to coal mined in the Province of Saskatchewan and shipped to points in the Province of Manitoba and to points in the Province of Ontario for use by consumers other than the railways the assistance granted shall be as follows:
>
> (a) To points in the Province of Manitoba the assistance granted shall be the sum of 35 cents per net ton, the same to be deducted from the existing rail rate and payable to the railways.
>
> (b) To points in the Province of Ontario the assistance granted shall be the sum of $1 per net ton, the same to be deducted from the existing rail rate and payable to the railways.
>
> The said assistance shall be payable under the following conditions:
>
> (a) That the assistance shall apply only to movements of coal to points where the Canadian coal to be used is at a disadvantage in competing with foreign coal.

(b) That the assistance shall not apply to coal when used for household purposes.

(c) That the assistance shall not apply to shipments of less than minimum carload lots.

(d) That the assistance shall apply to shipments of coal from coal mines or coal properties which were operating under legal permit and shipping coal prior to December 31, 1930.

(e) That the assistance shall not be granted to shippers or distributors who refuse or fail to furnish such information as the Minister of Mines may consider necessary in the administrative duties connected with this movement, and that for the purpose of certifying such information the Minister of Mines or such officers of the Dominion Fuel Board as he may designate shall have free access to all books, records, or accounts kept by shippers or the railways in connection with this movement and make such examination thereof as may be considered necessary or expedient.

Recent compensatory changes have been made, by Orders in Council, in subsidies granted on coal produced in Alberta, in the Crows Nest Pass district of British Columbia, and in the Province of Saskatchewan and shipped to consuming areas in the Provinces of Ontario and Manitoba. Subsidies on Alberta coal and Crows Nest Pass coal shipped to the Winnipeg market previously amounted to 70 cents per net ton, while the subsidies on the same coal shipped to Ontario previously amounted to one-fifth of 1 cent per ton-mile with a maximum of $2.00. Under the new Order in Council a 10-percent reduction of the freight rate from the mines in Alberta to the Manitoba markets is provided for, an average reduction of approximately 20 cents per net ton. Under the previous arrangement, the assistance on shipments to points in Ontario such as Kenora and Fort Francis amounted to $1.98 per ton, and the 30-percent reduction in the freight rate now authorized to this consuming area provides assistance at the approximate rate of $1.70 per ton. Coal destined for railway consumption is treated like that for industrial use.

The assistance on Saskatchewan coal destined for Manitoba markets was based on a bonus of 35 cents per ton when mined by shaft operations and 15 cents on strip-mined coal. Under the new Order in Council (P. C. 895) of April 9, 1936, a straight 10-percent reduction in tariff freight rates in effect at time of shipment is provided for. This will mean a subsidy of approximately 23 cents per net ton, or 10 percent of the present freight rate of $2.30 per ton on coal from Saskatchewan fields to the Winnipeg market.

It is believed that subsidies were reduced because the increased cost of American coal permitted a saving by the Canadian Government without a sacrifice in the competitive position of the Canadian producers. (Vice Consul Russel B. Jordan, Ottawa.)

Regarding export and bunker coal, P. C. 1122 authorizes:

(1) With respect to coal mined in the Province of British Columbia and sold for fuel for ships's stores or for export to foreign countries, assistance shall be granted out of such sums as may

be provided by Parliament from year to year for that purpose.

(2) That with respect to coal mined in the Province of British Columbia and sold for fuel as ships' stores, the assistance granted shall be the sum of 50 cents per net ton on a tonnage up to and including 60,000 net tons in any one year; any tonnage above the said 60,000 sold for fuel as ships' stores in the same year shall be granted assistance at the rate of $1 per net ton, the assistance being payable to the coal-mine operators or distributors.

(3) That with respect to coal mined in the Province of British Columbia and sold for export to foreign countries, as hereinafter excepted, the assistance granted shall be the sum of $1 per net ton, payable to the coal-mine operators or distributors under the conditions set forth as follows:

(a) That the assistance shall apply to coal for fueling ocean-going vessels but not for fueling vessels navigating entirely in inland waters.

(b) That the assistance shall apply to coal exported to foreign countries but not to coal exported for consumption in the United States of America.

(c) That the assistance shall apply only to shipments of coal from coal mines or coal properties that were operating under legal permit and shipping coal prior to December 31, 1930.

(d) That the assistance shall not be granted to those applying who refuse or fail to furnish such information as the Minister of Mines may consider necessary in the administrative duties connected with this assistance, and that for the purpose of certifying such information the Minister of Mines or such officers of the Dominion Fuel Board as he may designate shall have free access to all books, records, or accounts kept by coal producers or distributors in connection with this assistance and make such examination thereof as may be considered necessary or expedient. (Coal Statistics for Canada, 1934, p. 105.)

According to a report from Consul J. F. Burt, Ottawa, August 12, the new subsidy provided for in paragraph 2 of Orders in Council 1861 and 1862 for coal from New Brunswick and Nova Scotia shipped wholly by rail to points in the Province of Quebec (copies of which follow) apparently will result in an increase in the Government's payments on coal shipped to distant points and a decrease on coal shipped to Montreal and vicinity. For example, coal from the Cape Breton district shipped to Montreal by rail now enjoys a subsidy up to $2 per ton, whereas the subsidy under the new Orders in Council will be only about $1.14. While the new Orders in Council provide a new basis for granting the subsidy and an equalization of the subsidy to various sections of Quebec and Ontario, on the whole they represent an increase in the assistance granted to producers in Nova Scotia and New Brunswick. It is thought that because of the increased subsidies granted on coal shipped to certain sections operators in

Nova Scotia and New Brunswick will be able not only to compete with foreign coal in those districts but also will show enough profit so that they can do business with a small profit or a small loss in other districts.

Order in Council P. C. 951, dated May 30, 1933, has been rescinded and P. C. 1861, dated August 4, 1936, provides that:

> Movements of coal mined in the Province of New Brunswick and shipped to points in the Provinces of Quebec and Ontario be assisted by payments out of such sums as may be provided by Parliament from year to year for that purpose.
>
> With respect to coal mined in the Province of New Brunswick and transshipped wholly by rail to points in the Province of Quebec, excluding points on the Quebec & Lake St. John Railway, the Murray Bay line of the Canadian National Railways, and points on the railways east of Levis and the Quebec terminals (for use by consumers other than the railways), the assistance granted shall be a 30-percent reduction of the freight rate in effect at the time of shipment, the amount of the said reduction being payable to the railways.
>
> With respect to coal mined in the Province of New Brunswick and transported wholly by rail to points in the Province of Ontario for use by consumers other than the railways, the assistance granted shall be a reduction of one-sixth of one cent per ton per mile from existing rail rates, provided that the amount of the said reduction shall in no instance exceed $1.50 per net ton.
>
> With respect to coal mined in the Province of New Brunswick and purchased by the railway companies for their own use at points in the Provinces of Quebec and Ontario, payments shall be made to the coal-mine operators or coal distributors of the difference per net ton between the laid-down cost to the railways of coal mined in the Province of New Brunswick and the laid-down cost at the same points of imported coal that would otherwise be used, up to a maximum of $2.00 per net ton, provided that:
>
>> For the purpose of this Order in Council the said difference of laid-down costs shall be determined by the Dominion Fuel Board.
>
> The assistance shall not apply on shipments of less than carload lots.
>
> The assistance shall apply only on shipments of coal from coal mines or coal properties that were operating under legal permit and shipping coal prior to December 31, 1930.
>
> The assistance shall not be granted to those participating who refuse or fail to furnish such information as the Minister of Mines may consider necessary in the administrative duties connected with this movement; and for the purpose of certifying such information the

Minister of Mines or such officers of the Dominion Fuel Board as he may designate shall have free access to all books, records, or accounts kept by shippers or the railways in connection with this movement and may make such examination thereof as may be considered necessary or expedient.

The Minister of Mines be given the right to refuse approval in each and every application for assistance under this authority.

The Dominion Fuel Board be charged with the duty of administering this Order in Council and be required to report to the Minister of Mines the amounts paid under this Order in Council each year during the said period.

The Committee of the Privy Council submit that the importance of an extension of the market for Canadian coal is appreciated and that the Govdrnment is willing to facilitate this by granting financial assistance to the Canadian coal industry under conditions described hereunder. (P. C. 1862, of Aug. 4, 1936, rescinding P. C. 1119 of May 28, 1934.)

Movements of coal mined in the Province of Nova Scotia and shipped to points in the Province of Quebec and Ontario be assisted by payments out of such sums as may be provided by Parliament from year to year for that purpose.

With respect to coal mined in the Province of Nova Scotia and transported wholly by rail to points in the Province of Quebec (excluding the City of Hull, points on the Quebec & Lake St. John Railway, the Murray Bay line of the Canadian National Railway, and points on the railways east of Levis and the Quebec terminals) for use by consumers other than the railways, the assistance granted shall be a 30-percent reduction of the freight rate in effect at the time of shipment, the amount of the said reduction being payable to the railways.

With respect to coal mined in the Province of Nova Scotia and transported wholly by rail to points in the Province of Ontario and to the City of Hull in the Province of Quebec for use by consumers other than the railways, the assistance granted shall be a reduction of one-seventh of one cent per ton per mile from the existing rail rates, provided that the amount of said reduction shall in no instance exceed $1.50 per net ton.

With respect to coal mined in the Province of Nova Scotia and carried by water to St. Lawrence ports and thence transshipped by the railways to points in the Province of Ontario and to the City of Hull in the Province of Quebec for use by consumers other than the railways, the assistance granted shall be a reduction of one-third of one cent per ton per mile from the existing rail rates from the port of Montreal, provided that the amount of said reduction shall in no instance exceed $1.50 per net ton, the amount of the said reduction being payable to the railways.

With respect to coal mined in the Province of Nova Scotia and carried by water to any point situated west of the island of Montreal, the assistance granted shall be the same as that provided for rail movements, as authorized in the preceding section hereof, provided the amount of the said assistance shall in no instance exceed $1.50 per net ton, the same being paid to the coal-mine operators or distributors of the said coal.

With respect to coal mined in the Province of Nova Scotia and carried by water to any point west of the Island of Montreal, under the assistance provided by sec. 5 hereof, and thence transshipped by railways to points in the Province of Ontario west of the City of Kingston for use by consumers other than the railways, the assistance granted shall be a reduction of one-third of one cent per ton per mile from the existing rail rates, provided that the amount of the said reduction shall in no instance exceed $1 per net ton and shall be payable to the railways.

With respect to coal mined in the Province of Nova Scotia and purchased by railway companies for their own use at points in the Provinces of Quebec and Ontario, payments shall be made to the coal-mine operators or coal distributors of the difference per net ton between the laid-down cost to the railways of coal mined in the Province of Nova Scotia and the laid-down cost at the same points of imported coal that would otherwise be used, to a maximum of $2 per net ton, provided that:

For the purpose of this Order in Council, the said difference of laid-down costs shall be determined by the Dominion Fuel Board. The assistance shall apply only on shipments of coal from coal mines or coal properties that were operating under legal permit and shipping coal prior to December 31, 1930.

The assistance shall not apply on shipments of less than carload lots.

The assistance shall not be granted to those participating who refuse or fail to furnish such information as the Minister of Mines may consider necessary in the administrative duties connected with this movement; and for the purpose of certifying such information the Minister of Mines or such officers of the Dominion Fuel Board as he may designate shall have free access to all books, records, or accounts kept by shippers or the railways in connection with this movement and may make such examination thereof as shall be considered necessary or expedient.

The Minister of Mines be given the right to refuse approval in each and every application for assistance under this authority.

The Dominion Fuel Board be charged with the duty of administering this Order in Council and be required to report to the Minister of Mines the amounts paid under this Order in Council each year during the said period.

The following table shows the tonnage and percentage of bituminous coal originating in Canada, the United States, and Great Britain and used in the Province of Quebec, 1928-34, inclusive:

Year[1]	Canadian coal		United States coal		British coal		Total
	Net tons	Per cent of total	Net tons	Per-cent of total	Net tons	Per-cent of total	Net tons
1928	2,382,246	62.3	1,303,607	34.1	137,549	3.6	3,823,402
1929	2,372,541	64.0	1,242,180	33.5	92,941	2.5	3,707,662
1930	1,894,062	60.5	1,111,811	35.5	124,931	4.0	3,130,804
1931	1,746,183	65.2	858,015	32.0	75,560	2.8	2,679,758
1932	1,587,423	67.6	470,781	20.0	290,780	12.4	2,348,984
1933	1,998,953	74.7	433,706	16.2	244,276	9.1	2,676,935
1934	2,884,609	75.8	659,566	17.3	263,357	6.9	3,807,532

(Coal Statistics for Canada, Dominion Bureau of Statistics, 1928, p. 52; 1929, p. 53; 1930, p. 56; 1931, p. 55; 1932, p. 53; 1933, p. 53; 1934, p. 56.)

[1] 1935 figures not available.

The proportion of United States coal in the Quebec market in 1932, 1933, and 1934 is significant in view of the following statement:

According to Coal Statistics for Canada, 1934, p. 97, Canadian coal from Nova Scotia and New Brunswick, moved under "assisted" rates, amounted in 1928 to 114,025 net tons; 1929, 304,507; 1930, 372,065; 1931, 401,836; 1932, 704,886; 1933, 1,481,638; and 1934, 1,824,656 net tons - a total of 5,203,613 net tons. Data for 1935 are not yet available. (See p. 15 for explanation of "assisted" rates.)

United States

During the fiscal years 1929, 1930, and 1931, the Congress authorized a form of aid to the export coal trade of the United States. An appropriation was made available to the United States Shipping Board for reconditioning and operating a number of ships to carry coal overseas, in order to enable American coal exporters to compete in foreign markets and to stabilize ocean coal freight rates. Under this authorization vessels of the Shipping Board carried a total of 296,147 long tons of coal to overseas destinations (see following table). The arrangement was a help to the shippers and exporting firms engaged in the overseas coal trade and provided a certain amount of additional traffic to the railroads and of employment to the coal-mine workers in the fields accessible to tidewater.

It was anticipated that these operations might result in a loss to the government and such proved to be the case. The receipts and expenditures were reported to the Congress by the Shipping Board in the hearings on the annual appropriation bills.[1] The total revenue received in the fiscal years 1929, 1930, and 1931 was $790,621.10, and the total expenses $2,351,743.89 (operating expenses $1,646,548.82, reconditioning and inactive expenses $705,195.07). The total loss was $1,561,122.79, of which $855,927.72 was direct operating loss, and $705,195.07 was reconditioning and inactive expenses. The average loss, per long ton of coal carried overseas was, operating loss $2.89 and reconditioning or inactive expense loss $2.38, or a total loss of $5.27 per long ton.

Details are shown in the following table which was submitted by representatives of the Shipping Board in hearings before the House Committee on Appropriations, February 11, 1932.

EXHIBIT 1.

Coal trade-operating results[1]

	No.	Tons	Revenue	Expense	Profit or loss
Fiscal year 1929:					
Voyages	16				
Coal carried		106,498			
Voyage results			$273,950.53	$544,109.18	2/ $270,158.65
Reconditioning and inactive expenses.				499,877.06	2/ 499,877.06
Total results 1929.			273,950.53	1,043,986.24	2/ 770,035.71
Fiscal year 1930:					
Voyages	27				
Coal carried		176,747			
Voyage results			474,910.09	1,029,988.20	2/ 555,078.11
Reconditioning and inactive expenses				194,665.64	2/ 194,665.64
Total results, 1930			474,910.09	1,224,653.84	2/ 749,743.75
Fiscal year 1931:					
Voyages	2				
Coal carried		12,902			
Voyage results			41,760.48	72,451.44	2/ 30,690.86
Reconditioning and inactive expenses				10,652.37	2/ 10,652.37
Total results, 1931			41,760.48	83,103.81	2/ 41,343.23
Totals, fiscal years 1929, 1930, 1931 and July to October 1931:					
Voyages	45				
Coal carried		296,147			
Voyage results			790,621.10	1,646,548.82	2/ 855,927.72
Reconditioning and inactive expenses.				705,195.07	2/ 705,195.07
Grand total...	45	296,147	790,621.10	2,351,743.89	2/1,561,122.79

1/ Reproduced from "Independent Offices Appropriation Bill for 1933, Hearing before the Subcommittee of House Committee on Appropriations in charge of Independent Offices Appropriations Bill for 1933, 72nd Congress, 1st Session, Washington, Government Printing Office, 1932, page 580. 2/ Loss

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[1] See the following Hearings before Subcommittees of the House Committee on Appropriations in charge of the Independent Offices Appropriation Bills: "Independent Offices Appropriation Bill for 1930," 70th Congress, 2nd Session, pp. 411-12, 433-435. "Independent Offices Appropriation Bill for 1931," 71st Congress, 2nd Session, pp. 530-532, 533-537, 558-573. "Independent Offices Appropriation Bill for 1932," 71st Congress, 3rd Session, pp. 534-535, 565-566."Independent Offices Appropriation Bill for 1933," 71st Congress, 1st Session, 1932, pp. 479-580.

Poland

There are no direct cash subsidies made by the Government of Poland to the export coal trade. The low freight rates on coal exported, granted by the gover ment owned and operated railroad, is not considered a direct subsidy, as is evidenced by the following statement from the U. S. commercial attaché at Warsaw.

> There are no export premiums for coal. The Government provides low railway freight rates for export but at no real sacrifice of revenue, in the opinion of the industry, for at higher freight rates the volume of export traffic would be much smaller through inability to compete. The premium collected on domestic sales and paid to exporters in 1932 was discontinued because it was merely a gift to the foreign importer paid for by the industry. Nonexporting mines no longer contribute to the export pool. The Government never did contribute. There is no prospect of introducing export premiums. (Commercial Attaché Clayton Lane, Warsaw, April 3, 1935.)

Germany

An item in Commerce Reports, May 30, 1936, p. 420 which refers to Germany's exports in general states:

> The maintenance of the present volume of exports, moreover, is only possible by the payment of export subsidies which, in the past year, absorbed some 700,000,000 to 800,000,000 marks through a special levy on German industry. The first year of the operation of this scheme expired on May 1, but, after considerable controversy between the Government and industry, it has been renewed for another year. According to private information, industry is to supply 600,000,000 marks, while banking and trade (notably import trade) is to provide 175,000,000 marks, and there will be an attempt to collect another 200,000,000 marks from agriculture. Last year's assessment was exclusively on turn-over, while it is now to be on profits as well, so that corporations which earned smaller profits will have to pay less than last year.

Belgium

In Belgium a special duty is levied on imports, and at least part of the duty collected is used to aid the coal industry. During the budget year 1934-35, 39,850,000 francs (about $1,833,000) was provided for the coal industry, of which about 10,000,000 francs (about $460,000) will be repaid to the Treasury. (Iron and Coal Trades Review, London, Mar. 13, 1936, p. 510.)

Brazil

In 1930 the Brazilian Government passed a law, now in effect, requiring that a quantity of domestic coal equivalent to 10 percent of the coal imported must be purchased by all importers. (Consul Olin G. Loren, Rio de Janeiro, June 4, 1936.)

PREFERENTIAL RAIL RATES

Preferential rail rates is one of the oldest methods of assisting certain industries. A British Foreign Office report, released in 1898, describes preferential rates in effect in Austria-Hungary, Belgium, Denmark, France, and Germany.

In general, the purpose of preferential rail rates has been to enable a railroad with a circuitous route to compete with a more direct line or a home industry to compete with a similar industry abroad which is more advantageously situated.

It is understood that Germany prior to the war was the only coal-exporting country that granted reduced rail rates on export coal. Today Poland, South Africa, and a number of other countries also grant such reduced rates.

Germany

For many years the export coal trade has enjoyed exceptionally low freight rates to tidewater. This has been possible because of the type of ownership, organization, and control of the German railroads. For about 12 years, or from 1924 to 1936, the railroads, although entirely owned by the Government, were leased to a private operating concern. Under this arrangement, however, it was possible for the Government, through its power of control, to have low rates granted on export coal.

The following, taken from reports by Consul L. L. Schnare in 1930 and by Consul S. B. Vaughan, Breslau, 1936, indicate the extent to which the export coal trade has been favored:

For a period of 1 year, beginning July 1, 1930, reduced rates were put into effect by the German railways on coal for export to overseas destinations via the North Sea, Baltic ports, and the principal ports of the Netherlands and Belgium. The reductions amount to 20 to 65 percent of the freight rates otherwise applicable. The rates from Gelsenkirchen, Ruhr District, to Hamburg, are domestic 12.50, coastal 8.20, bunker 5.80, and export 4.50 marks per metric tons. For every shipment a despatching fee of 1 mark ($0.238) is also made. The domestic rate applies to shipments to points within Germany other than along the seacoast; the coastal rate applies to shipments destined for consumption in certain prescribed areas along the German coast on the Baltic and North Seas where competition from imported coal must be met. The export rate applies only when exports from districts where the coal originates exceed those of the previous year. The new export rate probably was granted to aid the Upper Silesian coal industry, which it is expected will suffer from the admission into Germany of some 300,000 tons, annually, of Polish coal provided by the German-Polish treaty now awaiting ratification by both countries. It is not expected to be of particular benefit to the important exporting Ruhr District, because the water freight rates on the Rhine and the network of canals in Middle and Western Germany are still considerably (approximately 33 percent) cheaper than the new railway export rates. (Consul L. L. Schnare, Breslau, Aug. 18, 1930.)

The railway freight from the Ruhr (Dortmund) District to Emden (a principal coal-exporting port), a distance of 247 km (155 miles), per metric ton, in not less than 10-ton lots, is:

		Converted at 1 RM equals $0.2385
Under Schedule "F" ...... RM	11.60	$2.77
Coal Rate Supplement of "F".	10.80	2.58
A. T. 6 B. 1	7.60	1.81
(a) Coastal tariff	5.20	1.24
(b) Bunker coal	4.20	1.00
(c) Export coal	3.10	.74

(Vice Consul Stephen B. Vaughan, Breslau, June 10, 1936.)

It is difficult to say whether or not the preferential freight rate is a subsidy.

Poland

Poland claims that its charge of about 80 cents per metric ton for a haul for which the United States railroads charge about $2.62 is not a subsidy, because the increased traffic carried at the lower rate would be lost at the regular rate.

Reporting under date of March 26, 1936, Consul M. E. Malige, Warsaw, states.

> The policy of the Polish Government regarding coal exports, as expressed in 1934, is restricted to offsetting the unfavorable location of the Polish coal-producing region with respect to the seaboard by applying special railway rates and by increasing the handling facilities of the railways and the ports, as well as by supporting the industry in its efforts to improve its organizational, trade, and economic structure. The Government maintains that it has never employed such measures as currency depreciation or devaluation, nor political or economic pressure on importing countries, but has left the coal industry to normal competition.
>
> Available information obtained from authoritative quarters indicates that at this time the above is still true and that there are no direct governmental subsidies or bounties in aid of the Polish coal industry. However, certain freight reductions are granted by the railways, all of which are owned by the Government, on export coal. The standard rate for coal from the mines in Upper Silesia to Gdynia and Danzig is approximately 10.50 zlotyte ($2.00, $1.19 at 1930 parity) per metric ton, whereas the reduced rate applied to export coal is 4.20 zlotyte, ($0.80, $0.47 at 1930 parity) per metric ton, or 60 percent less. Since exports through those two ports have gradually grown from 5,000,000 metric tons in 1927 to about 8,000,000 metric tons in recent years, the freight differential aggregates a considerable figure. For instance, in 1935, when 7,700,000 tons passed through the two ports, this indirect subsidy amounted to about

47,400,000 zlotyte (equivalent to $5,313,540 at the 1930 exchange value of the zloty).

Polish exports overseas are subject to a rail haul of about 372 miles, according to a report from Consul Charles H. Heisler, Warsaw, in 1930. Since then a new line has been constructed which, it is understood, reduces the distance to about 300 miles.

The railroads in Germany and Poland are State-owned.

France

In an attempt to displace imported coal by French coal, France, in 1934, reduced rail freights 50 percent from certain French coal-mining centers to ports nearest the mines. (Consul J. G. Carter, Calais.)

AID BY INDUSTRY

Germany

The Umlage is a levy by the industry on coal production in the Ruhr, the proceeds of which are used to pay syndicate expenses and aid the export trade and trade in contested markets in Germany. The levy usually varies from month to month and year to year. It has ranged from approximately RM 2.00 in 1928 to more than RM 4.00 in 1935. No data are available showing the apportionment of the funds so raised. However, if we assume that RM 1.00 has been used to pay syndicate expenses and that one-fourth of the remainder has been used to assist sales in contested markets in Germany there apparently was expended in aid of the export coal trade about $0.20 per metric ton in 1928, 1929, and 1930; $0.36 per metric ton in 1931 and 1932; $0.54 in 1933 and 1934; and $0.55 per metric ton of coal exported in 1935. (Based on graph #8 in the Annual Report of the Rhenish-Westphalian Coal Syndicate, 1933-34 and Annals des Mines, Paris, February 1936, p. 146.)

According to a decision of the Reichskohlenverband, dated November 16, 1923, it is permissible for the mining syndicate, when pressing economic conditions or, rather, competition, but in particular foreign competition, justify it, to make regional changes in prices, but the grand total income of each syndicate must remain in the frame of the stipulated prices so as not to impair the annual budgetary calculations controlled by the Reichskohlenverband. The Reichskohlenverband is authorized to control and to demand any changes in the prices already stipulated for the syndicates. (Vice Consul S. B. Vaughan, Breslau, May 12, 1936, pp. 33-34.)

Great Britain

The coal industry as a whole in Great Britain has not attempted directly to aid the export coal trade. However, one of the major producing districts, namely the Midlands, has endeavored to stimulate its export trade.

In the Midlands, which includes also the counties of South and West Yorkshire and Derbyshire, a central selling association was formed in 1928, with county selling associations and a central shipping bureau having the cooperation of exporters. A monthly basic tonnage was fixed for each member, who raised a percentage or quota of the monthly basic tonnage. "Shorts" were carried forward as well as excesses up to 1 percent, but beyond that figure a fine of $0.72 a ton was imposed. Levies were made at rates up to $0.06 per ton of output, to be applied for the purposes of the association and, specifically, for the development of the export trade by means of subsidies, classification, grading, etc. (Based on reports from Trade Commissioner H. S. Fox and the American consuls at Cardiff and Newcastle-on-Tyne.)

HIGH DOMESTIC AND LOW EXPORT PRICES

It is probable that a large part, if not all, coal exported overseas is sold at less than the domestic price. Data on the subject are seldom available.

Poland

A report of the Commercial Secretary to the British Embassy, Warsaw, (the Colliery Guardian, London, May 15, 1931, p. 1750) states that the average price of Polish (bituminous) coal, per metric ton on the home market, in 1930 was 28 zlotys (9s. 3d. or $2.25 at the old parity) and the average export price was 11 zlotys (5s. 1d. or $1.24.)

It is probable that the average export price mentioned applied to exports overseas and not to the more profitable markets in countries adjacent to Poland. This would account for the discrepancy between the prices shown in the table at the end of this paper and those quoted by the commercial secretary.

Additional evidence is shown in a consular report reading in part as follows:

> A concurrent decline in the receipts from exports was observable due to the necessity of adjusting export prices to the lower level of British prices, caused by the depreciation of the pound sterling. This has meant that the present export prices absolutely preclude the profitable development of mines, especially as exports to 'unprofitable markets' constitute a third of the total foreign shipments, while exports to the "profitable markets" have decreased by one-half as compared with 1929. (Marcel E. Malige, American consul, Warsaw, May 26, 1936.)

The reasons which prompted Poland's policy are set forth in the following statements:

> Polish coal has generally been exported to Scandinavian countries at a loss which had to be repaid by higher prices on coal sold at home or to other countries, notably Austria, Hungary, Czechoslovakia, Germany, Yugoslavia, France, and Belgium.
>
> Immediately following the devaluation of the British pound, the Polish coal industry applied to the authorities for further reduction in the railroad coal tariff and also for an emergency loan to cover losses. The Polish Government called a special Coal Commission composed of representatives of the Government and coal industry to investigate

the matter of losses and to draw up ameliorative suggestions for relief. The commission, having proved to its satisfaction that the industry is losing about 6 zlotys ($0.675 U. S. currency) per ton of coal exported to northern markets (mainly Scandinavian) since the drop in the pound sterling, then prevailed on the government to take immediate steps.

The Government has decided that coal producers as well as workers should do their share in the fight to keep those foreign coal markets which otherwise would be lost, causing severe losses not only to the Government but also to the coal magnates and workers as well.

The Government has ordered coal producers, their organization, and miners to contribute to a battle fund called an "Equalization Fund" which will be used exclusively in supporting exports. In this connection efforts must be made to reduce overhead, administrative costs, salaries of central managements and office employees, and labor wages. The "Equalization Fund" will operate in connection with the offices of the Polish Coal Convention.

As a first step in this direction, a labor Arbitration Committee, which has been negotiating with miners in the coal districts, has now ordered a cut of 8 percent in wages, the savings from this source to be routed into the "Fund." It is estimated that the "Fund" will obtain about 20 million zlotys per annum from savings in miners' wages alone.

The balance of the annual losses of the industry (total annual losses set at approximately 45 million zlotys), or 25 million zlotys, will be derived from cuts in administrative costs, overhead, cuts in employees' salaries, cuts in salaries of central management, and decreased budgets of organizations representing the coal industry. Certain of the coal "magnates", it is reported, are bitterly opposed to the "Fund."

For the time being the Government has advanced an emergency loan of 5,000,000 zlotys to the coal industry (subject to reimbursement from the "Fund"), providing coal exports to Scandinavian countries be maintained at a level of 800,000 metric tons monthly or 10,000,000 tons annually. It is believed that this advance may be supplemented as deemed advisable. (Consul Stewart E. McMillin, Warsaw, Feb. 8, 1932.)

Coal exports are of paramount importance in Poland's effort to maintain a favorable trade balance, the gold standard currency stability, and foreign exchange for necessary imports and employment and to provide revenue for the State budget, the railways and merchant marine, and the completion of the port of Gdynia. Both press and official comment on the critical situation of the industry tends increasingly to emphasize the necessity of maintaining coal exports in order to avert difficulties even more serious and less readily supported than those involved in continuing to export coal at a loss.

Although Poland's coal exports in 1931 were 13.8 million tons as against 12.4 millions in 1930, an increase of 11 percent, this increase in volume does not reflect an actual improvement, since it was chiefly due to heavier but unprofitable exports to the so-called free markets, particularly to Scandinavia.

> In order to maintain production it became necessary to increase exports to unprofitable markets. The decline in the pound sterling added approximately 30 percent to the burden of maintaining these exports, and the loss on the 10 million tons of coal exports to the "free" markets is said to have approached 60 million zlotys, although some estimates place it as low as 45 millions. The loss on exports to Northern European markets is now between 6 and 7 zlotys (about $0.73) per ton.
>
> The increasing severity of import restrictions has particularly complicated the maintenance of coal exports. Such countries as France, Belgium, and Hungary, which had depended on foreign coal to supplement their inadequate domestic production, have established reduced import contingents or other restrictions. The Austrian restrictions on foreign exchange transactions have materially checked Polish coal exports, as have the establishment in Estonia of a State import monopoly for coal and coke and valuta restrictions and other obstacles in Germany, Finland, and Latvia.
>
> The necessity to maintain exports, even without profit, is argued on several bases. It is particularly emphasized in official comment that Poland secures 10 percent of its requirements of foreign exchange, or about 200 million zlotys, from the 10 million tons of coal exports to the so-called "free" markets. For every ton of coal exported the Polish coal industry receives 21 zlotys f. o. b. Danzig or Gdynia, of which the producer retains about 10½ ($1.18) zlotys, the balance going to the railroads for transportation costs and to cover handling charges at the ports. There is no prospect that any other industry will be able to undertake this function of securing valuta with which to pay for necessary imports. (Commercial Attache Clayton Lane, Warsaw, February 12, 1932.)

Commenting on the decline in value of coal exported from Poland and Germany, the Secretary for Mines in Great Britain had the following to say:

> The average (export) value of the former (Polish) has declined steadily since the year 1927 and that of the latter (Germany) fell by about 4s. 6d. ($1.09) a ton between June and August 1931. (Report of the Secretary for Mines, 1931, p. 7.)
>
> The downward trend of export prices in coal-producing countries abroad was more pronounced than at home. The average value of Polish coal exported declined by 16 percent in 1932, as compared with 1931, and that of German coal by 27 percent. (Report of Secretary for Mines, Great Britain, 1932, p. 5.)
>
> Since 1930 there has been a general depression of the price level in foreign markets. In terms of national currencies, German and Polish export coal values in 1934 were about one-eighth lower than in 1933, while since 1930 Polish export values have declined by two-fifths and

those of Germany have been more than halved. The reduction in values since 1930, in the case of Poland, corresponds to and, in the case of Germany, exceeds the decline in British values in terms of gold. (Report of the Secretary for Mines, Great Britain, 1934, p. 13.)

Germany

According to the Iron and Coal Trades Review, at the general meeting in 1933 of the Diergardt Medissen Mining Co. in Germany it was pointed out that coal was sold in foreign markets at a price of 6 to 7 marks ($1.43 to $1.67) lower than the inland price.

In testifying before the British Royal Commission on the Coal Industry, 1925 (p. 441 of the report), a witness was asked if it would be possible for the (German) selling syndicate to quote a low price for export by raising the price internally, to which the reply was "they do it as a matter of fact."

Great Britain

Lord Joicey, Chairman of the Lambton, Hetton, and Joicey Collieries, Ltd., in a recent letter to the London Times stated that "collieries supplying the home market have been doing extremely well, for they are getting about 1s. 9d. (about $0.42) a long ton above the prices obtained by the exporting collieries." (Coll. Guard., London, June 5, 1936, p. 1077.)

EFFECT OF LABOR STRIKE

As a result of the British mine labor strike of 1926, Poland captured a large part of the coal market in Scandinavia formerly enjoyed mainly by Great Britain. This move probably led to the reciprocal trade agreements between Britain and the three Scandinavian countries, under which Great Britian was assured, for a certain period, from 50 to 80 percent of the coal markets in these countries. To replace this lost tonnage Poland turned to the Mediterranean and other markets, largely supplied by Great Britain, and sold at less than British prices. Out of this development grew the Anglo-Polish agreement, now in effect, which restricts Polish exports to certain markets and to a stipulated percentage of British exports and regulates export prices.

BARTER

The various barter schemes result where one or both of two principals live in a country which has little or no gold and whose money is of little external value and therefore not available for foreign transactions. Barter transactions have altered trade channels. Probably the first instance was Polish coal for Italian oranges; more recently another transaction between the same two countries, coal for steamships, involved 1,600,000 metric tons of coal and another for Fiat motor parts, 380,000 tons. Other exchanges were made between Germany and Brazil; Germany and Italy; Great Britain and Newfoundland; Great Britain and Finland; and Great Britain and Sweden. Apparently a total of about 5,000,000 tons of coal has moved under barter schemes. In 1934 and 1935 Germany exported about 12,000,000 metric tons of coal to Italy. It is probable that actual cash transfers in the sale were unimportant.

Barter transactions doubtless were a direct result of the depression, which caused unfavorable trade balances between certain countries and a resulting shortage of foreign exchange.

GOVERNMENT CONTROL

The coal industry and trade of the three leading coal-exporting countries is subject to Government control. Some form of control was in effect in Germany many many years ago but since 1933 has been extended. The British Mines Act, 1930, as amended, in the main governs that country's industry and trade. Some 2 years ago the Polish industry and trade was controlled strictly by the Government. A peculiar condition exists in Poland, as consular reports indicate that 80 percent of the capital invested in coal mining is foreign - German, French, British, and American, in the order named. A large part of the coal exported is said to originate at German-owned mines.

Great Britain

The Coal Mines Act, 1930, as amended, is intended to regulate the productio of coal and fix minimum prices through a central council and district boards.

Germany

The Coal Council of the Reich estimates current coal demand, which is divided among the various syndicates on the basis of past performance. The syndicate informs each operator the tonnage it will sell for the operator within a certain period of time, and if the operator produces more than this amount he has to store it. For the bulk of the tonnage the syndicates propose a maximum price scale to the National Coal Association, which is composed entirely of producers, but the syndicates are free to quote lower prices. (See also p. 24, High Domestic and Low Export Prices.) (Based on the basic law of Mar. 23, 1919, and supplementary statutes of Aug. 21, 1919, and Apr. 21, 1933, Proclamation of Apr. 22, 1933, and par. 246 of the Commercial Code.)

Poland

Under a Presidential decree of April 6, 1932, promulgated in the official Law Gazette, April 7, the Minister of Industry and Commerce regulates coal production and sales on the domestic and foreign markets. He can fix prices for the home market and prohibit exports in general or of certain types of coal only. He may fix production quotas, apportion them to certain collieries, and distribute certain sales areas among them. He may create and regulate compulsory organizations of colliery owners.

Spain

According to an item in the Colliery Guardian, London, April 24, 1936, p. 795, the coal industry in Spain, by a projected decree, whose main points have appeared in the periodical El Liberal, is to be placed under the control of the Government and the Asturian mine owners. It is added that another measure in the same decree prohibits the use by Spanish ships of floating depots, such as coal hulks, just outside the 3-mile limit. This alone, it is stated, may make a difference of 250,000 tons to British coal interests. The whole decree is said to aim at reducing Spanish consumption of foreign coal to a minimum, and it is remarked that the allowance of an extra 250,000 tons of British coal into Spain, for which British mine owners had been hoping, can obviously no longer be considered. The whole decree, the article continues, is thought to represent a cut of over 50 percent in British coal importation, which amounted in 1935 to 1,243,128 long tons.

TRADE AGREEMENTS

In 1933 and 1934 Great Britain entered into reciprocal trade agreements with the Scandinavian countries, Finland, Estonia, Lithuania, and Latvia, under which these countries agreed to purchase from 47 to 85 percent of their coal requirements from Great Britain.

> The agreements with Norway, Sweden, Denmark, Iceland, and Finland have been particularly valuable. In 1931 imports of United Kingdom coal into these countries amounted to 3,591,000 (long) tons; in 1934 the tonnage was 7,989,000 tons, an increase of 4,398,000 tons. (Report of the Secretary for Mines, Great Britain, 1934, p. 7.)

According to Trade Commissioner J. Somerville, London (reporting in August, 1934), gains in exports to five trade-agreement countries were just about offset by losses from increased Polish competition in other markets. Keen competition resulted, and in 1935, in an Anglo-Polish agreement under which tonnage and prices in certain markets are regulated, Polish exports, except to frontier countries, were fixed at 21 percent of British exports to countries other than Ireland and North and South America.

LICENSES AND QUOTAS

In pre-war years practically no country, with the possible exception of Germany, restricted the importation of coal. In Germany it is understood that regulations did call for a license, but in practice none was required. In recent years practically all European countries restrict imports. The method, in addition to tariffs, which may discriminate against and divert trade because they are high for one country and low for another, is generally to require a license. In addition, many countries have a quota system under which the tonnages are based on imports in some previous period. In general such measures were adopted after Great Britain abandoned the gold standard, and their apparent purpose was to protect the domestic coal-mining industry.

France

In France, in 1931, the quota was 70 percent of the average annual imports in 1928, 1929, and 1930; in 1933 it was 65 percent and early in 1935, about 58.5 percent, of the average for the years mentioned.

Germany

Great Britain is the chief source of coal imported into Germany. The tonnage imported from Great Britain is a certain percentage of Germany's coal consumption in the second preceding month.

The Netherlands

In the Netherlands the quota is 60 percent of some previous period.

Belgium

In Belgium a license system was introduced in October 1931.

Poland

Poland, in 1934, prohibited all imports of coal and coke.

Italy

In 1935 the importation of coal into Italy was made a State monopoly.

CUSTOMS DUTIES

The following table shows the development of customs duties on coal in certain countries. In most countries the duty is stated in gold and paid in paper currency at a rate fixed by the Government. Comparatively few increases occurred between 1926 and 1935 in the customs duty proper, but in most countries additional taxes are collected. For instance, in Italy coal is free of duty if it is for the State railways or for bunkering Italian vessels, but for other uses it pays 10 percent of the c. i. f. value. In addition there is a fiscal tax of 3 lire per metric ton; an import license tax of 3 percent of the c. i. f. value; and, from October 1, 1935, a monopoly tax on full cargoes arriving by sea of 8 lire per metric ton and on part cargoes and land shipments of 10 lire per metric ton.

In Belgium, in October 1933, an import license tax of 10 francs per metric ton was imposed. (Report of the Secretary for Mines, Great Britain, 1933, p. 5.)

Customs import duties on coal 1/

(Per metric ton, except as otherwise shown)

Country and class	Unit of currency	Duty on coal		
		1913	1926	1935
Spain:	Peseta			
General		3.50	22.50	22.50
Second tariff		3.50	7.50	7.50
France:	Paper francs			
General		----	1.20	2/ 2.00
Minimum		1.20	1.20	----
Brazil: 3/	Milreis			
				4/28$220
			3$00	5/22$930
Canada: 6/	Dollars			
General		0.53	0.53	0.75
Intermediate		.45	.45	.75
British preference		.35	.35	.35
Chile	Pesos	(7/)	(7/)	11.20
Italy	Lire	(8/)	(8/)	(9/)
United States: 6/	Dollars			
General		(10/)	(10/)	(11/)

1/ Based on material supplied by the Foreign Tariffs Division, Bureau of Foreign and Domestic Commerce.

2/ Plus import tax of 2.75 percent of landed duty-paid value.

3/ Long tons.

4/ General.

5/ Minimum.

6/ Net tons; Canada, bituminous coal.

7/ Probably free.

8/ Free.

9/ Free. (See text.)

10/ Countervailing duty, that is, free if country of origin placed no duty on United States coal; if originating country placed a duty on United States' coals, the United States placed the same duty on coal from that country.

11/ The Revenue Act of 1932, sec. 601, Excise Taxes, states: "Coal of all sizes, grades, and classifications (except culm and duff), coke manufactured therefrom, and coal or coke briquets, 10 cents per 100 pounds. The tax on the articles described in this paragraph shall apply only with respect to the importation of such articles and shall not be imposed upon any article if during the preceding calendar year the exports of the articles described in this paragraph from the United States to the country from which such article is imported have been greater in quantity than the imports into the United States from such country of the articles described in this paragraph."

Chile

The limited market for Chilean coal in 1920, 1921, and 1922 prompted the Chilean Government in 1923 to appoint a coal commission to investigate and report on the situation. The commission found that reduced production was the result of labor troubles, the increasing cost of social services, and the loss of markets resulting from the opening of the Panama Canal and from the electrification of Chilean railways. It was found that about 80 percent of the coal produced came from mines that used modern methods and equipment. It also found that the northern third of the Republic was using imported coal and oil fuel, the displacement of which should increase the market for domestic coal by about 1,200,000 tons annually. Finally, it found that, owing to inadequate port-loading and coal-discharging facilities and the cost of ocean freight, native coal, the price of which was governed by the price of foreign coal and oil, was unable to compete in this important market. Accordingly a decree of December 22, 1925, placed a duty of 15 pesos per ton on coal, which had been free of duty, and on briquets, which had been subject to a rate of 3 pesos per ton. At the same time a duty of 3 pesos per ton (to be increased annually by 3 pesos until, at the end of 7 years, the duty would be 21 pesos per ton) was placed on crude petroleum, which had been entering duty free. Metallurgical coke was exempted. A later law empowered the President to increase the duty on coal to 25 pesos per ton if in his opinion this move were necessary to shut out all foreign competition. (Fuel and Power in Latin America, by J. R. Bradley, Trade Promotion Series No. 126, 1931, U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce, p. 92.)

SANCTIONS

Recent sanctions by members of the League of Nations against Italy probably acted to divert the movement of a considerable tonnage of coal. However, no data on the subject are available.

DEVALUATION OF CURRENCIES

For some time prior to the World War most countries were on the gold standard. In 1919 Great Britain abandoned the gold standard but returned to it in 1925, at which time the action is said to have involved a price disability of about 10 percent. In September 1931 Great Britain was again forced to abandon the gold standard, probably owing in part to the lack of uniformity in the gold parities established by the countries that returned to the gold standard after the war; the post-war redistribution of gold, which was said to be unfavorable to Great Britain; and a business depression of unprecedented severity. Apparently the result of this action was not as anticipated, as the British Secretary for Mines remarks:

> Owing to the holding of long-term contracts by the principal competitors of this country, and to the fact that they reduced their prices to meet the depreciation of the pound in September 1931, the advantage expected was not realized to any appreciable extent in the closing months of the year. (Report of the Secretary for Mines, Great Britain, 1931. p. 5.)

The Annual Report (1932) of the French Central Collieries Committee states that the depreciation of Sterling by 30 percent caused the f. o. b. British port price of coal to decline from 104 francs in 1930 to 73 francs in 1932, which forced proportional reductions in production costs and market price of coal on the Continent to the detriment of the French coal producer. (All countries on the gold standard were affected similarly. Belgium devalued the belga, which act, in turn, has curtailed the Belgian market for French coal; and in April or May 1936 Poland abandoned the gold standard.

Further results of Britain's abandonment of the gold standard in 1931 are given in the Colliery Year Book and Coal Trades Directory, 1936, page 684, wherein it is stated that the average declared value, f. o. b. port per long ton, of all coal exported in 1932, 1933, 1934, and 1935 was as follows: 16s.3d., 16s.1d., 16s.1d., and (to October) 16s.3d., respectively, while the equivalent on a gold-exchange basis was 11s.8d., 11s.0d., 9s.11d., and 9s.8d., respectively. Converted at the old parity, the differences range from about $1.10 to $1.60 per long ton.

Today virtually all countries have left the gold standard or have adopted such exchange restrictions as almost to amount to their having done so.

FOREIGN EXCHANGE

On the subject of foreign exchange an authority stated in 1933:

> Recent experience has shown only too plainly that of all the weapons of economic nationalism, unstable foreign exchange rates are by far the most powerful.
>
> The mechanism of foreign exchange rates deliberately maintained in a condition of fluctuation can, up to a point, be used as a powerful weapon in international economic warfare. There is no doubt that unstable, and especially falling, foreign exchange rates can yield temporary trade advantage, but only until counteracted by measures of reprisal on the part of other countries, either in the form of a competition in the manipulation of exchange rates, or of special trade barriers. And there is abundant experience to demonstrate that sooner or later such reprisals are bound to occur, with devastating consequences for everyone concerned. (Leo Pasvolsky, in The Necessity for a Stable International Monetary Standard, International Chamber of Commerce, Paris, 1933, p. 37.

The most recent evidence of the lack of gold and its influence on the international coal trade is found in an item from the Colliery Guardian, London, May 15, 1936, p. 945, as follows:

> Criticism is contained in the current issue of the Journal des Charbonnages of an agreement concluded between the French and Turkish Governments. The agreement is the result of Turkey experiencing difficulty in meeting all her debts abroad, the majority of which have been incurred in France. Under the new arrangement part of the debts will be paid in cash and the remainder in goods. The greater part of

this second payment will be in coal; and as Turkey, although a coal-exporting country, is not in a position to supply the necessary quantities, the coal, to the extent of some 200,000 metric tons per year for the period 1936-1940, will come from Germany, who will in this way settle some of her debt to Turkey.

Early in 1935 stringent control of foreign exchange was practiced in the Argentine, Brazil, Bulgaria, Chile, Costa Rica, Czechoslovakia, Denmark, Ecuador, Germany, Hungary, Iceland, Italy, Spain, Turkey, Russia, Uruguay, and Yugoslavia. The government control of foreign exchange is due mainly to the desire to conserve gold reserves in countries still on a gold basis and thus protect the country's currency, but control can also be used to divert trade from a country with an unfavorable to a favorable trade balance. The present foreign-trade policy of a number of countries is to adjust the value of imports from any country to the amount of foreign exchange made available by exports to that country. Since 1931 Germany has controlled foreign-exchange transactions strictly.

Excepting Brazil, after 1925, the exchange value of the currencies of the United Kingdom, United States, Germany, Poland, and Italy fluctuated very little until the abandonment of the gold standard by Great Britain in 1931 and by the United States in 1933.

An instance of the effect of depleted gold reserves or lack of foreign exchange and also, perhaps, the effect of sanctions is the determination of Italy to make greater use of its fuel and power resources. In the future Italy hopes to reduce its coal imports by half; imports in 1934 were valued at about $44,000,000.

About March, 1935 Italy intimated to Great Britain that British coals would be imported to the extent only that funds were provided by exports of Italian goods to Great Britain.

In September 1931 the Bank of Brazil was granted a monopoly of exchange, which restricted foreign-exchange transactions. Blocked foreign exchange in Turkey was responsible for the fact that 60,000 tons of Turkish coal entered the Brazilian market in 1935.

The main causes and effects of the dislocation of international trade in coal have been reviewed. In the rest of the paper the author will discuss the competitive position of the United States, Great Britain, Germany, and Poland in the Italian and Brazilian markets and will attempt to show why the United States is at a disadvantage.

RAIL TRANSPORTATION

The principal coal-exporting districts in the United States are considerably farther from tidewater than are the exporting districts in Great Britain and Germany. The chief exporting district in Poland is approximately the same distance from its shipping ports as are the principal districts in the United States from theirs, but the State-owned railroads grant a rate that is about the same as the average British rate for a haul of about 20 miles.

The chief outlets for German shipments is down the Rhine River to Rotterdam and through the port of Emden, about 127 and 155 miles, respectively, from the Ruhr. No data are available on the average rail or barge rate to Ruhrort. The barge rate from Ruhrort to Rotterdam varies with the depth of water and ice conditions, but the average is probably not over $0.35 per long ton and the rate, mine to Rotterdam, is probably not over $0.75. In recent years some traffic has been diverted by preferential rail rates from Rotterdam to Emden and Bremen, both farther than Rotterdam.

The percentage increase in present rail rates over 1913 in Great Britain and the United States is apparently about the same.

WATER TRANSPORTATION

Another serious disadvantage to the American exporter arises from the high ocean freight rates. Many factors besides the important one of supply and demand and return cargo may affect the ocean rate. The River Plate (Buenos Aires) tramp market is one of the most important, since Europe is the most important market for Argentine grain, and the condition of the harvest is important to the shipowner. During 1935 some of the factors, mainly temporary in nature, were the action of the Argentine government in increasing the minimum price of grain, the reduction in the grain requrements in Europe (as France had a surplus of wheat for export), and increased receipts of Argentine grain in the United States. The American coal exporter has a direct interest in crop conditions and the number of vessels available in the Argentine and Canada. Other factors that at times affect the market may be unstable political conditions in the country, labor conditions, war, and port conditions (more particularly river ports).

Tramp tonnage, in which export coal moves, is owned largely in Great Britain, and ocean freight rates generally have been quoted in sterling although at times in dollars; late in 1933, however, ship operators refused to quote in dollars. The ocean freight rate is an important part of the delivered or c. i. f. price, particularly on coal from the United States; and the incidence of exchange fluctuations is indicated in that a freight of 10 shillings, with the pound at $4.48, was $2.24; at $4.86 it was $2.43; and at about $5.25 it was $2.62. In view of the keen competition in the international coal trade the increased ocean freight cost was a serious disadvantage to American coal exporters.

Influence of Return Cargo on Ocean Freight Rates

The freight rates of tramp steamers are influenced greatly by the ability of the operators to obtain a return cargo, or, if not a return cargo, a cargo to some other destination where there is a likelihood of securing another.

The favorable position of Great Britain, Germany, and, to some extent, Poland with respect to ocean freight rates and the disadvantage of American coal exporters was developed by Calvin Stuart (Merchant Shipping Industry, John Wilson & Sons, Inc., New York, N. Y., 1925, p. 49). According to this study, 13 commodities (coal, iron ore and manganese, wheat, wood, raw sugar, corn, fertilizer, rice, cotton, wood pulp, rye, barley, and oats) form the base of the tramp shipping trade. In 1922 these commodities amounted to 137,420,000 long tons, of which 60 percent crossed no ocean. Coal alone accounted for 52 percent of the total tonnage.

Of the outbound portion of the 137,420,000 long tons, Europe, our competitc in the international coal trade, shipped to other continents 15,560,000 long tons and to North America 21,840,000 long tons; but Europe received from other countries 31,980,000 long tons and North America only 7,710,000 long tons. While these data are rather old, the proportions probably hold good today.

In 1931, at the annual meeting of the British Chambers of Commerce, it was said that coal constituted 80 percent by weight of all British exports in 1930. When allowance was made for difference in bulk, 30,000,000 long tons out of a total of 66,000,000 net (ship) tons of shipping that left Great Britain carried coal.

In 1932, according to the American consul at Liverpool, the weight of all imports into Great Britain totaled 52,300,000 long tons, of which raw materials accounted for 19,100,000. The weight of all exports, excluding coal, coke, and briquets, was 10,100,000 long tons, or 60 percent of the 1913 figure. Exports of coal, coke, and briquets, and foreign bunkers in 1932 were 56,100,000 long tons and in 1913 were 97,720,000 long tons.

Ocean freight rates on coal are very low in comparison with rail rates. Lord Glanley, a prominent British ship owner, recently stated at the annual meeting of his company that British coal could be carried to almost any world port for less than the cost of a taxicab fare across London.

Coal is the greatest of all tramp cargoes, when considered by volume.

ANALYSIS OF TRANSPORT CHARGES

Incidence of Transport Charges in C. I. F. Price

In 1913, of the c. i. f. Italy price, transport charges on American low-volatile coal accounted for 79.7 percent (rail freight for 25.4 percent); in 1925 for 72.5 percent (rail freight for 33.7 percent); and in 1929 for 71.9 percent (rail freight 37.5 percent).

In 1913, of the c. i. f. Rio de Janeiro price, transport charges on American low-volatile coal accounted for 83.1 percent (rail freight for 21.1 percent); in 1925 for 74.6 percent (rail freight 31.0 percent); in 1929 for 75.3 percent (rail freight 33.0 percent); and in 1933 for 76.9 percent (rail freight 43.6 percent).

In 1913, of the c. i. f. Italy price, transport charges on Welsh coal were 43.2 percent (rail charges 6.8 percent); in 1925, 38.5 percent (rail rate 10.1 percent); 1929, 45.9 percent (rail rate 11.8 percent); and in 1933, 38.6 percent (rail rate 13.6 percent).

In 1913, of the c. i. f. Rio de Janeiro price, transport charges on Welsh coal comprised 56.5 percent (rail freight 5.2 percent); 1925, 47.8 percent (rail rate 8.6 percent); 1929, 53.1 percent (rail freight 10.2 percent); and in 1933,

An appraisal of the competitive price relationship in certain international coal markets in 1913, 1925, and 1928-1934. 1/

(Note: For the purpose of comparison values given in the original sources have been converted at the old parities, i.e., the pound sterling at $4.86, the mark at $0.238 and the zloty at $0.1121. It is the purpose of this table to show, as nearly as is practicable, the competitive position of the leading coal-exporting countries during certain years in Italy and in Brazil. Figures are not available to show the actual position of each country, and it has thus been necessary to take such data as are at hand, and even these are not always entirely comparable. Average pithead values: With the exception of the United States, these values were arrived at by deducting the freight charges to tidewater from the average f.o.b. port or frontier values as shown by official statistics. For the United States, the average pithead values for low-volatile coal for the various years have been arrived at from the average mine values of the West Virginia counties of Fayette, Greenbrier, Raleigh, McDowell, and Mercer, and for high-volatile coal, Marion, Harrison, Monongalia, Lewis, and Taylor Counties. Freight charges to tidewater: Obtained from the various sources indicated. Average f.o.b. port or frontier value: For Germany and Poland these values were arrived at by dividing the total export values by the total tonnages exported for the various years, as given in official reports. For the United Kingdom the official average declared values f.o.b. ports of exportation for all coal exported from these ports were shown in the various sources indicated, and for the United States the freight charges to tidewater were added to the average pithead values to determine the average f.o.b. port or frontier values. Average ocean freight rates: Obtained from sources indicated; however, for Great Britain for the years 1913, 1928-30 the rates were from Great Britain to Genoa, as rates were not shown from Newcastle-on-Tyne or from Cardiff. Average foreign port delivery value, not including marine insurance: In all cases values were arrived at by adding the ocean freight rates to the f.o.b. port or frontier values. Government and industry aid: Average aid per ton of all coal exported from Great Britain and Germany. Aid on a small proportion of the total tonnage from the United States.)

Year, country, and port	Average pithead value, per long ton	Freight charges to tidewater	Average f.o.b. port or frontier value per long ton	Average ocean freight, tidewater to— Genoa	Average ocean freight, tidewater to— Rio de Janeiro	Average foreign port delivery value, not including marine insurance Genoa	Average foreign port delivery value, not including marine insurance Rio de Janeiro	Government aid (G), Industry aid (I)
1913								
Great Britain..Newcastle	2/ $2.55	3/ $0.43	4/ $2.98	5/ $2.80	—	$5.18	—	—
Cardiff	2/ 3.44	3/ 0.41	4/ 3.85	5/ 2.20	5/ 4.05	6.05	$7.90	—
U. S. A.......Hampton Roads	6/ 1.20	7/ 1.50	8/ 2.70	5/ 3.20	5/ 4.40	5.90	7.10	—
Baltimore	6/ 0.98	7/ 1.43	8/ 2.41	5/ 3.20	5/ 4.40	5.61	6.81	—
Germany	2/ 2.73	9/ 0.89	10/ 3.62	11/ 2.20	—	5.81	—	(12)
1925								
Great Britain..Newcastle	2/ 3.36	3/ 0.75	4/ 4.11	13/ 2.16	—	6.27	—	14/ $0.70 (G)
Cardiff	2/ 4.70	3/ 0.77	4/ 5.47	13/ 2.17	13/ 3.53	7.64	9.00	14/ 0.70 (G)
U.S.A.........Hampton Roads	6/ 2.14	7/ 2.62	8/ 4.76	13/ 3.01	13/ 3.68	7.77	8.44	—
Baltimore	6/ 1.70	7/ 2.50	8/ 4.20	13/ 3.01	13/ 3.68	7.21	7.88	—
Germany	2/ 4.01	15/ 0.88	16/ 4.89	13/ 2.09	—	6.98	—	(12)
Poland	2/ 1.41	17/ 0.82	18/ 2.23	19/ 2.88	—	5.11	—	—
1928								
Great Britain..Newcastle	2/ 2.52	20/ 0.75	4/ 3.27	5/ 2.00	—	5.27	—	—
Cardiff	2/ 3.35	20/ 0.76	4/ 4.11	5/ 2.00	5/ 2.65	6.11	6.76	—
U. S. A.......Hampton Roads	6/ 1.97	7/ 2.62	8/ 4.59	5/ 2.45	5/ 3.45	7.04	8.04	—
Baltimore	6/ 1.54	7/ 2.50	8/ 4.04	5/ 2.45	5/ 3.45	6.49	7.49	—
Germany	2/ 3.90	15/ 0.88	16/ 4.78	13/ 2.01	—	6.79	—	21/ 0.17 (I)
Poland	2/ 2.37	17/ 0.82	18/ 3.19	13/ 2.46	—	5.65	—	—
1929								
Great Britain..Newcastle	2/ 2.74	19/ 0.75	4/ 3.49	5/ 2.20	—	5.69	—	22/ 0.15 (G)
Cardiff	2/ 3.50	19/ 0.76	4/ 4.26	5/ 2.20	5/ 3.20	6.46	7.46	22/ 0.15 (G)
U. S. A.......Hampton Roads	6/ 1.96	7/ 2.62	8/ 4.58	5/ 2.40	5/ 3.35	6.98	7.93	23/ 2.89 to 5.27 (G)
Baltimore	6/ 1.46	7/ 2.50	8/ 3.96	5/ 2.40	5/ 3.35	6.36	7.31	23/ 2.89 to 5.27 (G)
Germany	2/ 3.83	24/ 0.97	16/ 4.80	13/ 2.12	13/ 2.94	6.92	7.74	21/ 0.22 (I)
Poland	2/ 2.33	17/ 0.82	18/ 3.15	13/ 2.75	19/ 3.20	5.90	6.35	—
1930								
Great Britain..Newcastle	2/ 2.82	19/ 0.75	4/ 3.57	5/ 1.60	—	5.17	—	22/ 0.15 (G)
Cardiff	2/ 3.61	19/ 0.76	4/ 4.37	5/ 1.60	5/ 3.15	5.97	7.52	22/ 0.15 (G)
U. S. A.......Hampton Roads	6/ 1.92	7/ 2.62	8/ 4.54	5/ 2.10	5/ 3.10	6.64	7.64	23/ 2.89 to 5.27 (G)
Baltimore	6/ 1.35	7/ 2.50	8/ 3.85	5/ 2.10	5/ 3.10	5.95	6.95	23/ 2.89 to 5.27 (G)
Germany	2/ 4.02	24/ 0.97	10/ 4.99	13/ 1.56	13/ 2.64	6.55	7.63	21/ 0.22 (G)
Poland	2/ 2.24	17/ 0.82	18/ 3.06	13/ 1.82	19/ 3.35	4.88	6.41	—
1931								
Great Britain..Newcastle	2/ 2.52	19/ 0.75	4/ 3.27	13/ 1.51	—	4.78	—	22/ 0.16 (G)
Cardiff	2/ 3.52	19/ 0.76	4/ 4.28	13/ 1.51	13/ 2.03	5.79	6.31	22/ 0.16 (G)
U. S. A.......Hampton Roads	6/ 1.66	7/ 2.62	8/ 4.28	13/ 2.03	13/ 2.46	6.31	6.74	23/ 2.89 to 5.27 (G)
Baltimore	6/ 1.16	7/ 2.50	8/ 3.66	13/ 2.03	13/ 2.46	5.69	6.12	23/ 2.89 to 5.27 (G)
Germany	2/ 3.33	24/ 0.97	10/ 4.30	13/ 1.47	13/ 2.22	5.77	6.52	21/ 0.30 (I)
Poland	2/ 1.97	17/ 0.82	18/ 2.79	13/ 1.78	19/ 2.22	4.57	5.01	—
1932								
Great Britain..Newcastle	2/ 2.42	19/ 0.75	4/ 3.17	25/ 1.52	—	4.69	—	22/ 0.17 (G)
Cardiff	2/ 3.48	19/ 0.76	4/ 4.24	25/ 1.52	25/ 2.02	5.76	6.26	22/ 0.17 (G)
U. S. A.......Hampton Roads	6/ 1.32	7/ 2.62	8/ 3.94	—	25/ 1.95	—	5.89	—
Baltimore	6/ 0.93	7/ 2.50	8/ 3.43	—	25/ 1.95	—	5.38	—
Germany	2/ 2.16	24/ 0.97	10/ 3.13	19/ 1.52	25/ 2.06	4.65	5.19	21/ 0.40 (I)
Poland	2/ 1.72	17/ 0.62	18/ 2.34	19/ 1.72	—	4.06	—	—
1933								
Great Britain..Newcastle	2/ 2.39	19/ 0.75	4/ 3.14	26/ 1.43	—	4.57	—	22/ 0.22 (G)
Cardiff	2/ 3.44	19/ 0.76	4/ 4.20	26/ 1.40	26/ 2.02	5.60	6.22	22/ 0.22 (G)
U. S. A.......Hampton Roads	6/ 1.39	7/ 2.62	8/ 4.01	—	26/ 2.00	—	6.01	—
Baltimore	6/ 1.04	7/ 2.50	8/ 3.54	—	26/ 2.00	—	5.54	—
Germany	2/ 2.01	24/ 0.73	10/ 2.74	26/ 1.36	26/ 1.94	4.10	4.68	21/ 0.50 (I)
Poland	2/ 1.59	17/ 0.49	18/ 2.08	26/ 1.69	—	3.77	—	—
1934								
Great Britain..Newcastle	2/ 2.39	19/ 0.75	4/ 3.14	26/ 1.55	—	4.69	—	22/ 0.21 (G)
Cardiff	2/ 3.44	19/ 0.76	4/ 4.20	26/ 1.53	26/ 1.98	5.73	6.18	22/ 0.21 (G)
U. S. A.......Hampton Roads	6/ 2.07	7/ 2.62	8/ 4.69	—	26/ 2.34	—	7.03	—
Baltimore	6/ 1.65	7/ 2.52	8/ 4.17	—	26/ 2.34	—	6.51	—
Germany	2/ 1.65	24/ 0.73	10/ 2.38	26/ 1.64	26/ 1.91	4.02	4.89	21/ 0.54 (I)
Poland	2/ 1.33	17/ 0.49	18/ 1.82	26/ 1.96	—	3.78	—	—

1/ From the United States, Germany, and Poland, bituminous coal. From Great Britain: Cardiff, bituminous coal and some anthracite, and Newcastle-on-Tyne, bituminous coal only. Very little anthracite is shipped to Rio de Janeiro, whereas Genoa receives a fairly large tonnage.

2/ Arrived at by deducting freight charges to tidewater from the average f.o.b. port or frontier value.

3/ Colliery Guardian, London, 9/23/27, p. 372: 1927 figure used for 1925. (Includes rail rate, wagon hire, wharfage, and tipping charges from Cardiff and from Newcastle-on-Tyne.)

4/ Annual Report of the Secretary for Mines: For the years 1913, 1930-33, the 1933 issue p. 190; for years 1925, 1928, and 1929, the 1929 issue p. 139; and for 1934, p. 164.

5/ Expert Testimony in Interstate Commerce Commission, Docket No. 23430.

6/ Mineral Resources of the United States, Part II, 1914, p. 738; 1925, p. 507; 1928, p. 555; 1929, pp. 816 and 817; 1930, p. 719; 1931, p. 485; 1932-33, p. 436; 1934, p. 339; 1935, pp. 304-305.

7/ Tariffs on file with the Interstate Commerce Commission. Ten cents for dumping added to Hampton Roads rate.

8/ Average pithead value plus freight charges to tidewater.

9/ American consul, Cologne, 12/29/28. Rate to Rotterdam, port or transshipment charges, if any, unknown.

10/ Consul Stephen B. Vaughan, Breslau, 5/12/36.

11/ Estimated on the basis of rate from Great Britain.

12/ No data are available on the extent of the preferential rail rate on export coal in 1913 and 1925.

13/ Special Supplement, Daily Freight Register, London, 1925, 1/3/28, p. 4; 1928-30, 1/2/31, p. 5; and 1931, 1/4/32, p. 5.

14/ Colliery Year Book and Coal Trades Directory, 1927, pp. 674 and 684. (Sixty percent of the subsidy to the industry as a whole has been apportioned to the export coal trade and this amount divided by the total tonnage exported.)

15/ Rate used is that in force in 1913.

16/ Monatliche Nachweise uber den auswartigen Handel Deutschlands, 1925, p. 52; 1928, p. 54; 1929, p. 54.

17/ Colliery Guardian, London, 5/10/29, p. 1051 for 1928; 1925, 1929 to 1931 based on 1928 rate; 10/5/34, p. 627 for 1932 and 1933 rate; 1934 based on 1933 rate. Port charges, if any, unknown.

18/ Annuaire du Commerce Exterieur, Poland: 1925, p. 208; 1928, p. 71; 1929, p. 67; 1930, p. 67; 1931, p. 39; 1932, p. 39; 1933, p. 55; 1934, p. 32; and 1935, p. 23.

19/ Estimated. Average ocean freight, Poland to Genoa, in the years 1925 and 1932, are based on the rate from Cardiff in each respective year; Poland to Rio de Janeiro for the years 1929, 1930, and 1931 are also based on the Cardiff rates. Freight charges to tidewater from Newcastle and Cardiff, 1929 to 1934 inclusive are based on the 1928 figures.

20/ Cable from commercial attache, London, 11/5/28. These charges include wagon hire, wharfage, and tipping charges.

21/ Based on graph 8 in the Annual Report of the Rhenish-Westphalian Coal Syndicate, 1933-34 and Annals des Mines, Paris, Feb. 1936, p. 146. (One mark deducted for office expenses; three-fourths of the remainder estimated as aid to the export coal trade. See text regarding Umlage.)

22/ Colliery Year Book and Coal Trades Directory, London, 1935, p. 621.

23/ Hearings on Independent Offices Appropriation Bill 1933, p. 580. For details see pp. 18-19.

24/ Commercial attache H. L. Groves, letter #886, Berlin, 1/4/30, for 1930 rate; 1929, 1931, and 1932 based on 1930 rate; Consul W. W. Heard, Breslau, 11/2/33, 1933-34 rates. Port or transshipment charges, if any, unknown.

25/ Fairplay, London, 1/5/33, p. 78 and Shipbuilding and Shipping Record, London, 12/29/32, p. 665.

26/ Dispatch 2726 from the American Consulate General, London, 6/27/36.

44.7 percent (rail rate 12.2 percent). No computations have been made for Germany or Poland, as the rail and rail and barge rates to tidewater, as well as the ocean freight rates from these countries, correspond closely to the rates from Great Britain.

The rail rates always and the ocean rates generally show the disadvantage experienced by American coal exporters to Europe and South America.

The foregoing comments on Analysis of Transport Charges and Competitive Conditions were based on data contained in the following table. In this table an attempt has been made to compare pithead values, rail and ocean freights, and delivered prices of coal exported from the leading exporting countries. It is not claimed that the figures are exact, but it is believed that prior to 1931, at least, they approximate the conditions that prevailed.

COMPETITIVE CONDITIONS

Competitive Conditions in Italian Market

In Italy in 1913 United States low-volatile coal was apparently at a price advantage of $0.15 per long ton as compared with South Wales coal, and high-volatile coal was $0.43 higher than Durham coal. United States low-volatile coal was $0.08 higher and high-volatile coal was $0.21 lower than German coal. Great Britain supplied 88.9 percent, Germany 8.1 percent, and the United States 3.0 percent of the coal shipped to Italy by these countries.

In 1925 the American price disadvantage for low-volatile coal were $0.13 as compared with Welsh coal and $0.79 as compared with German coal, and for high-volatile coal, $0.94 as compared with Durham coal, German $0.23, and Polish coal $2.10. In this year Great Britain supplied 68.9 percent, Germany 22.3 percent, Poland 0.9 percent, and the United States 7.9 percent.

In 1929 United States low-volatile coal was $0.52 per long ton higher than Welsh coal, $0.06 higher than German coal, and $1.08 higher than Polish coal. United States high-volatile coal was $0.67 a long ton higher than Durham coal, $0.56 higher than German coal, and $0.46 higher than Polish coal. Great Britain supplied 55 percent, Germany 36.8 percent, Poland 4.4 percent, and the United States 3.8 percent. In 1932, 1933, and 1934 no United States bituminous coal was exported to Italy.

Competitive Conditions in Rio de Janeiro Market

In the Rio de Janeiro market in 1913 United States low-volatile coal apparently was $0.80 per long ton lower and high-volatile coal $1.09 lower than Welsh coal. In this year Great Britain supplied 89 percent and the United States 11 percent of the coal.

In 1925 United States low-volatile coal was $0.56 and high-volatile $1.12 per long ton lower than Welsh coal. In 1925 Great Britain supplied 65.1 percent and the United States 34.9 percent.

In 1929 United States low-volatile coal was $0.47 per long ton higher and high-volatile $0.15 lower than Welsh coal and $0.19 higher than German coal. United States high-volatile coal was $0.49 lower than German coal. United Stat low-volatile coal was $1.58 and high-volatile $0.96 higher than Polish coal. In 1929 Great Britain supplied 86.1 percent, the United States 9.6 percent, Germany 1 percent, and Poland 3.3 percent.

In 1933 United States low-volatile coal was $0.21 per long ton lower than Welsh coal but $1.33 higher than German coal; United States high-volatile coal was $0.68 lower than Welsh but $0.86 higher than German coal. Great Britain supplied 63.9 percent, the United States 7.3 percent, and Germany 28.9 percent.

As has been stated, the foreign exchange conversion factors used in the table were the mint parities in the year 1913. The approximate competitive position per long ton of coal in the Genoa market in 1933, arrived at by using the average exchange value for that year, was: Durham coal, $3.97 (instead of $4.57); Cardiff coal, $4.87 (instead of $5.60); German, $5.42 (instead of $4.10) and Polish, $4.11 (instead of $3.77). In the Rio de Janeiro market Cardiff coal was $5.41 (instead of $6.22); United States coal from Hampton Roads, $6.01; and German coal $5.93 (instead of $4.68).

In 1934, in the Genoa market, Durham coal was $4.85 (instead of $4.69); Cardiff coal $5.93 (instead of $5.73); German coal $7.09 (instead of $4.02), and Polish coal $5.05 (instead of $3.78).

In the Rio de Janeiro market Cardiff coal was $6.40 (instead of $6.18), American low-volatile coal $7.03, and German coal $7.37 (instead of $4.29).

The reason why the tonnages exported from the various countries to Italy and Brazil are not in accord with the apparent delivered prices can only be accounted for by the various forms of aid to the export coal trade that have been mentioned heretofore.

The values shown in recent years for Germany and probably Poland are of doubtful use. In the case of Germany, a report to the British Embassy in Berlin by the commercial counsellor, entitled Report on Economic Conditions in Germany, says in part:

> Under existing conditions and regulations, compensation transactions of all kinds have tended to confine the exchange of goods more and more to bilateral transactions, so that most-favored-nation treaty clauses have lost much of their importance. By the end of 1935, 31 countries had come to some sort of payments or clearing Agreement with Germany; 60 percent of German foreign trade was then regulated in this way, and it has been authoritatively stated that the yield of free foreign exchange only amounted to 20 percent of total German exports in 1935. ***.
> In the summer of 1935 an extended scheme of export subsidies, with a view to enhancing the competitive possibilities of German exports, took the place of the old and exhausted scrip-subsidy scheme. The necessary funds for the new scheme were obtained from German industrial concerns by means of a levy. At the same time the use of Register marks, Sperr marks, and various other kinds of blocked or clearing marks, all of them at a discount

to purchasers of German goods, was also continued as a measure of subsidy to exports. ***. Import and export values in Reichsmarks, however, are not a reliable guide for assessing German foreign trade, for the following reasons: Little trade actually is done in Reichsmarks in cash; Reichsmark transactions through clearing-account marks may have been bought or sold abroad at a discount; and the gold standard of the Reichsmark in foreign trade is only partly maintained." (The Board of Trade Journal, London, July 23, 1936, p. 136.)

In a report entitled Competition in the Brazilian Coal Trade, by Consul O. G. Loren, Rio de Janeiro, July 14, 1936, the Consul states that in 1934 and 1935 imports of coal into Brazil from Great Britain were 686,746 and 626,416 metric tons; from Germany, 294,594 and 529,597; from the United States, 92,016 and 71,070; from Turkey, nil and 61,024; from Dantzig, nil and 25,531, and from all other countries, nil and 1,124 metric tons, respectively.

The average price per metric ton of all coals imported in 1934 was 78$176, or about $6.48 U. S. A. currency; in 1935, 103$600 or $6.10 U. S. A. currency; and in 1936, 117$900 or about $6.50 U. S. A. currency. The present price paid by the central purchasing agency of the Government for German coal (duty free) is 96$000 per metric ton (2,204.6 pounds).

The Consul further reports that local importers state that German coal is sold at a price at which it is impossible for British or American exporters to compete, and that this is due to the barter agreement between Germany and Brazil and the use of the "compensation mark" - a mark with a lower exchange value than the regular mark.

RELATIVE POSITION OF THE FOUR EXPORTING COUNTRIES

The following table shows the relative position of Great Britain, Germany, the United States, and Poland in the Italian and Brazilian coal markets during the years under review.

Italian Market

The table discloses that Great Britain at no time has regained its 1913 position and in only one year, 1932, just after the depreciation of the pound sterling, did it excel its position in 1925. In 1913 Britain supplied 88.9 percent and in 1935 only 26.8 percent. The United States in 1913 supplied 3 percent, reached the peak in 1925 with 7.9 percent, excelled its 1913 position in both 1929 and 1930, but has been virtually out of the market since 1931. The improvement of Germany's position with respect to the Italian market has been phenomenal. In 1913 Germany supplied 8.1 percent of the total shipments, increased its share to 22.3 in 1925 and to 36.8 in 1929, after which there was a decline until 1933, when it was 27.6 percent, 42.8 percent in 1934, and 61.2 percent in 1935. In 1925 Poland supplied less than 1 percent of Italy's requirements. In 1928, 1929, and 1930 it supplied slightly more than 4 percent, and rather gradually it increased its exports to Italy to 15 percent in 1934, but these declined to 11.9 percent in 1935.

Brazilian Market

Great Britain has fared better in the Brazilian than in the Italian market, both of which it dominated for many years. In 1913 Great Britain shipped 89 percent of the coal imported by Brazil (the United States supplied the remainder) and in 1928 the peak was reached with 91 percent. Shipments declined regularly, however, until in 1931, when they reached only 61.3 percent. In 1932, the year following the abandonment of the gold standard, British exports to Brazil jumped to 71.5 percent, but then declined until in 1935 they were only 47.8 percent. The United States supplied 11 percent in 1913, 34.9 in 1925, and 16.3 in 1931. In 1930, 1934, and 1935 the percentage approximated that in 1913. It is not quite clear just why the United States in recent years has been able to approximate its 1913 position while in Italy it has failed entirely. Germany's trade with Brazil apparently was insignificant until 1930, when it furnished 11.3 percent of the coal exported by the four countries. In 1931 and 1932 the percentage was about 22 in each year; it was about 28 in 1933 and 1934, and jumped to 41.9 in 1935. Poland has not been an important factor in the Brazilian market, having supplied about 1 percent or less in 1928, 1930, 1931, and just about nothing in 1932, 1933, 1934, and 1935. In 1929, the peak year, it supplied only 3.3 percent.

Percentage of coal exported to Italy and Brazil by the United Kingdom, the United States, Germany, and Poland in 1913, 1925, and 1928-1935, inclusive

(U.S. and Poland, bituminous coal; U. K. and Germany, anthracite and bituminous coal)

Year	From United Kingdom 1/	From United States 2/	From Germany 3/	From Poland 4/	Total
To Italy:					
1913	88.9	3.0	8.1	-	100.0
1925	68.9	7.9	22.3	0.9	100.0
1928	56.4	1.7	37.7	4.2	100.0
1929	55.0	3.8	36.8	4.4	100.0
1930	63.5	3.3	28.9	4.3	100.0
1931	61.3	1.9	27.8	9.0	100.0
1932	69.4	(5/)	19.3	11.3	100.0
1933	60.0	0.1	27.6	12.3	100.0
1934	42.2	(5/)	42.8	15.0	100.0
1935	26.8	0.1	61.2	11.9	100.0
To Brazil:					
1913	89.0	11.0	(5/)	(5/)	100.0
1925	65.1	34.9	(5/)	(5/)	100.0
1928	91.0	8.0	(5/)	1.0	100.0
1929	86.1	9.6	1.0	3.3	100.0
1930	76.3	11.8	11.3	0.6	100.0
1931	61.3	16.3	21.2	1.2	100.0
1932	71.5	6.2	22.3	(5/)	100.0
1933	63.9	7.3	28.9	(5/)	100.0
1934	61.9	10.5	27.4	0.2	100.0
1935	47.8	10.2	41.9	0.1	100.0

1/ Monthly Accounts Relating to Trade and Navigation of the United Kingdom.

2/ Commerce and Navigation of the United States, Bureau of Foreign and Domestic Commerce.

3/ Monatliche Nachweise uber den auswärtigen Handel Deutschlands.

4/ 1925, Colliery Guardian, 2/24/28, p. 764; 1928, 1929 and 1930, Colliery Guardian, 5/20/32, p. 1001; 1931, Consul C. Warwick Perkins, Warsaw, 5/6/33, p. 8; 1932, 1933 and 1934, Clayton Lane, Amer. Commercial Attache, Warsaw, Spec. Report No. 66, 4/3/35, p. 6, Bureau of Foreign and Domestic Commerce; and 1935, Annual Economic Review of Poland - 1935, Apendix "I", by Commercial Attache, Warsaw, Bureau of Foreign and Domestic Commerce.

5/ Shipments very small, no reliable data available.

SUMMARY AND CONCLUSION

The outstanding causes for the radical changes in channels of international coal trade have been the proportion of coal exports to all exports, coal exports as a percentage of production, the unemployment of coal miners in the countries under review, changed frontiers (with special reference to Polish Upper Silisia), and reparation coal deliveries. Other important causes have been the failure of world coal production to increase, significant changes in centers of coal production, the increased use of fuel oils and hydraulic power, and the more efficient use of coal.

To offset these causes many countries have deemed it necessary to grant government aid to the coal industry and trade; to sanction preferential rail rates on coal, high domestic and low export prices, and barter schemes, and to effect trade agreements, impose license and quota schemes, increase customs duties or excise taxes, and control foreign exchange transactions. In some of the principal coal-exporting districts a levy has been placed on production to aid the export trade.

It seems evident that during the period under discussion the interested governments and the coal industries in these countries have expended the equivalent of many millions of dollars to aid their export coal trades and that through artificial measures millions of tons of coal have been diverted from normal trade channels. Only an intimate knowledge of the entire politico-economic set-up in each country would enable one to say whether the measures taken have been worth while. In any case their effect generally has been temporary because of offsetting moves in other countries, the most recent of which has been the authorization in Great Britain of a levy on production in the chief exporting districts in behalf of their export coal trade.

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